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**NANSEN STATION DATA FOR THE INDIAN
AND PACIFIC OCEANS 1982 TO 1987**

L.J. HAMILTON

MARITIME SYSTEMS DIVISION
WEAPONS SYSTEMS RESEARCH LABORATORY

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AMENDMENT TO WSRL-TM-30/88

Please amend your copy of WSRL-TM-30/88 Nansen Station Data for the Indian and Pacific Oceans 1982 to 1987 by L.J. Hamilton.

On page 111, delete the following lines:

$$c = -0.5025278 * 0.01$$

$$d = 0.109749 * 0.01$$

Paste the attached amendment over the deleted lines.

$$c = -0.5025278 * 0.1$$

$$d = 0.109749 * 0.1$$

Mary Linnane

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NANSEN STATION DATA FOR THE INDIAN AND PACIFIC OCEANS 1982 TO 1987

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Nansen station data taken by Maritime Systems Division (Sydney), (formerly known as RANRL or Royal Australian Navy Research Laboratory), are presented as tables and plots. The Nansen stations were occupied in the East Indian and southwest Pacific Oceans between November 1982 and December 1987 by Royal Australian Navy oceanographic research vessels HMAS Kimbla and HMAS Cook. The data tables are also available on floppy disk.

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INTRODUCTION

Nansen station data are listed and tabulated for thirteen cruises made between November 1982 and December 1987 in the east Indian and southwest Pacific Oceans. The Nansen data were collected from Royal Australian Navy oceanographic vessels HMAS Kimbla and HMAS Cook by the Royal Australian Navy Research Laboratory (RANRL), which became part of Maritime Systems Division of Weapons Systems Research Laboratory in 1987. Data for some of these stations have been listed elsewhere, as detailed for each cruise, but the data in this report have been revised, and these listings are intended to replace any previous ones. The basic purpose of the listings is to (a) provide a useful data set for other researchers, and (b) to ensure that the data will be placed in data banks, specifically those of the Australian Oceanographic Data Centre.

Data were taken in accordance with the procedures in Publication No. 607 of the USN Oceanographic Office "Instruction Manual For Obtaining Oceanographic Data", third edition 1968. (See also Hamilton, 1982a). Details of methods and equipment used to obtain and process the data are given in following sections, as are details of particular processing problems for each cruise. This allows quality indicators to be assigned for archival (data base) purposes, and allows determination by users of the usefulness of the data for their particular application. As a general note, bottle spacing in near surface waters is often far from ideal at a 25 m or greater vertical separation, except when mixed layers occur.

Publications which have made use of these data are referenced for each cruise, to enhance the usefulness of the data set. This memorandum does not make any further analysis of the data, except for the derivation of some temperature - salinity polynomial regression relations.

The Nansen data listed herein are available on DOS format diskette. To obtain a copy send requests to the author through the Chief, Maritime Systems Division.

EQUIPMENT

Ships and winches

HMAS Cook is fitted with bow thruster and active rudder which enables ship manoeuvring to keep the oceanographic wire vertical. HMAS Kimbla simply drifted during the course of a station, with only limited manoeuvring possible to keep the vessel from over-running the wire. Winch wire retrieval rates for HMAS Cook are about 80 m/min, and higher in calm conditions. Wire rate for HMAS Kimbla was usually 30 to 40 m/min.

Deep Sea Reversing Thermometers (DSRT)

Protected type DSRT used were:

- (a) 0 to 32°C Watanabe-Keiki with 0.10°C gradations and absolute accuracy of the order $\pm 0.03^\circ\text{C}$ or better

TABLE 1. DETAILS OF MARITIME SYSTEMS DIVISION CRUISES WHICH OCCUPIED NANSSEN STATIONS FOR 1982 TO 1987

Cruise name	Vessel (HMAS)	Period	Number of stations	Nominal depth (m)	Location
RANRL 15/82	KIMBLA	November 1982	2	400	Tasman Sea
RANRL 30/82	KIMBLA	April 1983	16	1500	South Tasman
RANRL 23/83	COOK	May 1983	18	1500	East Indian
TC 1	COOK	December 1983	12	Bottom	Tasman Sea
RANRL 1/84 (SEAMAP 1)	COOK	January 1984	8	2000	Southwest Pacific
RANRL 24/83	KIMBLA	February 1984	6	1500	South Tasman
TC2	COOK	March 1984	7	Bottom	Tasman Sea
RANRL 11/85	COOK	March 1985	9	200	East Indian
RANRL 6/85 (SEAMAP 2)	COOK	July 1985	14	Bottom	Southwest Pacific
RANRL 3/86	COOK	May 1986	1	2000	Tasman Sea
RANRL 6/86	COOK	September 1986	1	500	Tasman Sea
RANRL 1/87	COOK	May 1987	21	Bottom	Tasman Sea
MSD 2/87	COOK	November 1987	19	Bottom	Tasman Sea

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(b) for TC 1 and later cruises 0 to 6°C Cohn Precision with 0.002°C graduations and absolute accuracy better than 0.01°C.

Unprotected type DSRT used were:

(a) 0 to 32°C Watanabe-Keiki

(b) 0 to 35°C Watanabe-Keiki with low Q-factors

- (c) 0 to 60°C Watanabe-Keiki with low Q-factors
- (d) one only Negretta-Zambra 0 to 60°C with Q-factor of order 0.1
- (e) since November 1983 0 to 60°C Gohla Precision with Q-factor of order 0.1 .

The Watanabe-Keiki DSRT are calibrated for Maritime Systems Division by CSIRO (Commonwealth Scientific and Industrial Research Organisation) at irregular intervals. The Watanabe-Keiki DSRT are now from 11 to 26 years old and are therefore not expected to experience calibration shifts caused by glass movements. The Gohla-Precision DSRT are aged for 6 months by the manufacturer to minimize such problems. History cards have been maintained for the DSRT to eliminate those with unreliable performances.

It became apparent by comparison with other DSRT that one batch of Watanabe-Keiki unprotected DSRT had threes and fives interchanged in their Q-factors on the original calibration sheets (serial numbers 2750x).

The purchase of two batches of Gohla 0 to 60°C unprotected DSRT allowed later cruises to definitely confirm observations on the performances of the limited number of 0 to 60°C unprotected DSRT available previously. These observations were further confirmed by doubling up DSRT in a Niskin bottle rosette sampler used with a Plessey model 9041 CTD. It has taken some time to get enough intercomparison data but the performance details of many doubtful DSRT are now known or confirmed. This has enabled problems with several conflicting data values to be resolved or confirmed, and allowed a revision of DSRT depth and temperature data to allow formal presentation of results.

Nansen bottles

Watanabe-Keiki type were sometimes used for casts to 1300 m or so. Tsurumi-Sikie-Kosakusho (TSK) Nansen bottles were used for the deeper casts, and also for some shallow casts. The Nansen bottles are serviced before and after cruises. All bottles are 15 or more years old and mostly well used, ie most are well conditioned to the effects of seawater.

Position and time

Measurement of position for all cruises was by satellite navigation position fixing system (satnav). Some positions have been interpolated directly between the available fixes, but on others the satnav dead reckoning position is used. Since several satnav fixes usually occurred for each station, negligible errors are expected. The time given is time of messenger drop for the shallow cast, even if the deeper casts were made first. Times are GMT (now UTC) unless otherwise noted.

NANSEN STATION DATA PROCESSING

Nansen station data were collected using the standard procedures outlined in publication 607 (US Naval Oceanographic Office, 1970). The bow thruster and active rudder on HMAS Cook were used to keep the

oceanographic wire near vertical. Oxygen samples were analysed using the Winkler method (Major and others, 1972). Salinity samples were analysed for conductivity ratio using an Autolab Inductive Salinometer Mk III model. Derived quantities such as salinity and sound-speed were calculated using the algorithms shown in Table 2. Reversing thermometer temperatures were calibrated and pressure corrected using desktop computer programs (Hamilton, 1982b) which are corrected versions of May (1969). Dynamic heights and geostrophic currents were calculated using computer programs also in Hamilton (1982b), which are corrected and updated versions of May (1969).

TABLE 2. REFERENCES TO ALGORITHMS USED TO PROCESS NANSEN STATION DATA

(DSRT = Deep Sea Reversing Thermometer)

Calculation	Reference
DSRT Temperature Correction	SVERDRUP (1947)
DSRT Reversal Depth	WUST (1933)
Conductivity to Salinity	LEWIS (1980)
Depth to pressure	SAUNDERS (1981)
Density - One Atmosphere	MILLERO and POISSON (1981)
- High Pressure	MILLERO, CHEN, BRADSHAW and SCHLEICHER (1980)
Potential Temperature	BRYDEN (1973)
Sound Speed	WILSON (1960)

Data were verified and checked for consistency by standard methods:

- (a) Curves of differences between DSRT thermometric depths (Z) and wire out (L) were made (the L-Z curves).
- (b) Discrepancies in temperatures and depths were resolved by examining the DSRT history and by examining data profiles, temperature-salinity (T-S) curves, and derived parameters such as density (σ_t) and anomaly of specific volume.
- (c) Cruises RANRL 1/87 and MSD 2/87 used Nansen bottles strung on CTD (Conductivity Temperature Depth profiler) wire, so that CTD data could often be used to resolve doubtful values.

(d) In some cases T-S polynomials could be constructed for parts of the water column to fill in data sets where eg the salinity sample was lost, but the depth and temperature data were good. These values are not included in the tables, EXCEPT FOR CRUISE MSD 2/87 (where they are marked accordingly), but are shown before the Nansen data listings proper. The T-S polynomials are also given in notes before the listings.

In the tables OBS stands for observed values, and ISL for interpolated values. The interpolation scheme is a simple 3-point Lagrangian, with linear interpolation used when the Lagrangian interpolation falls outside the range of the observed values in the depth interval. This scheme is fairly robust, but does occasionally throw up skewed values. Dynamic heights are computed using linear interpolation and trapezoidal integrations between observed values.

THE DATA

Nansen data listings and plots for the thirteen cruises are given on following pages, in the order shown in Table 1. Notes are given before the listings for each cruise on data processing problems, doubtful data, and references to publications arising from the cruise, which are not necessarily concerned with the Nansen data.

Positions for southwest Pacific Nansen stations listed in this memo are shown on the map below. Positions for all other stations, which were occupied in the southeast Indian Ocean, are shown on page 23. Local maps are also given for major surveys.

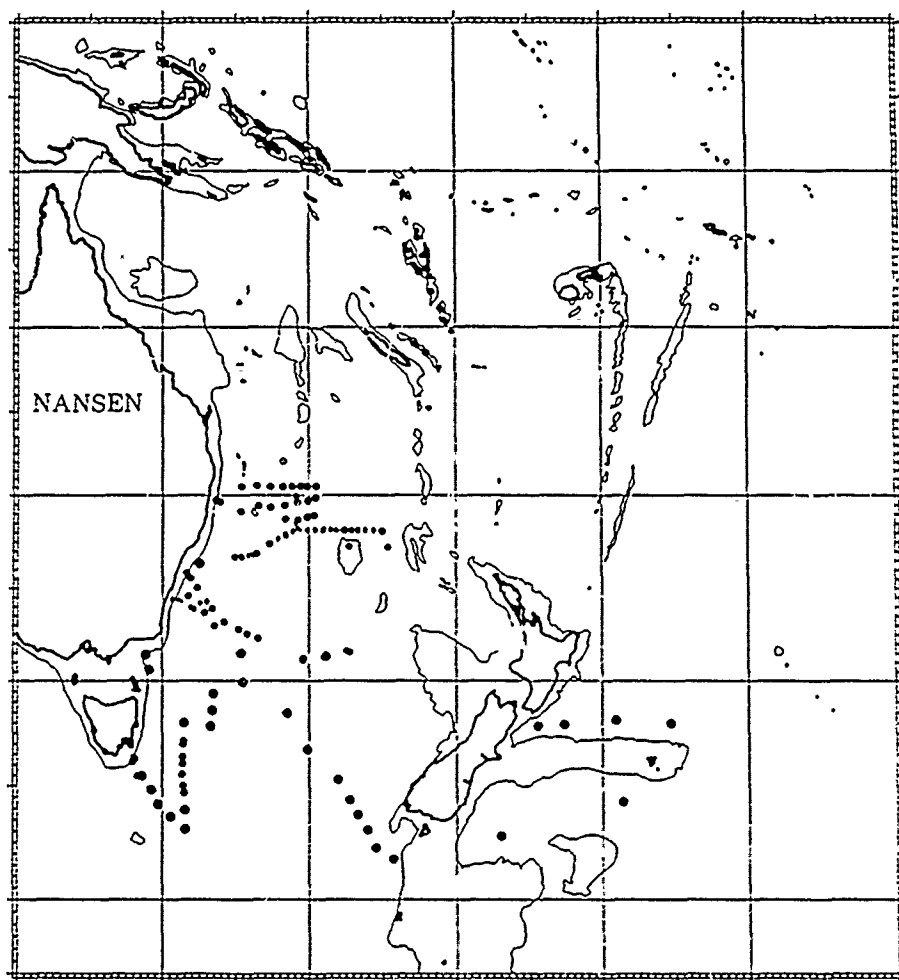


Figure 1. Nansen station positions in the south-western Pacific Ocean 1982 to 1987

Cruise RANRL 15/82

Notes for cruise RANRL 15/82

All depths for station 2 are from wire angle only. (Three Nansen bottles were lost when the bottom shoaled quickly, and no unprotected thermometer data were obtained.) The Nansen station data are listed overleaf on page 8, and the station positions are shown plotted on page 98, with station positions for other surveys.

Additional data for cruise RANRL 15/82

Mulhearn, P.J. (1986)

"Studies of the East Australian Current off Northern New South Wales".

RANRL Technical Note No. 6/86.

Note: Nansen station data taken during a cruise in May 1983 also discussed in the document are not included in the present compilation because temperature values are not sufficiently accurate.

Cruise RANRL 30/82

Notes for cruise RANRL 30/82

The stations were made as a top cast (nominally to 300 m), and a deeper cast to 1500 m. The depths of the top cast for stations 1, 3, 7, 9 are computed from wire angle, and the mixed layer depth (MLD) given by expendable bathy-thermograph (XBT) temperature profiles. Station 7 has one depth (185 m) positively given for a sample bottle fitted with two unprotected reversing thermometers. The other top cast depths for station 7 are uncertain because of winch operator error and thermometer malfunction. These points are not used to calculate derived quantities. This is unfortunate as the station showed a large temperature inversion in XBT traces. Station 3 has one depth from an unprotected thermometer which was erratic at the start of the cruise.

Station	Wire angle (degrees)	XBT #	MLD (m) from XBT	Cast depths determined to:
1	15	55, 56	85, 84	291
3	30	64	85 *	260
7	25	106	80	77
9	30	115	36 **	130

* For station 3, the unprotected DSRT depth and depth computed from wire angle were within 12 m at 200 m, and 18 m at 300 m.

** For station 9, the data at 130 m is doubtful.

Nansen data in the mixed layer are assumed to be good values and are included in the tables. Other top cast values for these stations showing depth correspondence with co-incident XBT are also assumed to be good data and are included in the listings. They can be determined from the above table.

Additional data are available for some depths not in the tables eg temperature-depth values where the salinity sample was lost, or temperature-salinity data where the depth is not positively known. These values were used in the overplot of T-S curves and the scatter plot of T-S values shown on page 13.

Additional Nansen data for RANRL 30/82

Depth (m)	T	S	
Between 77 and 185	14.38	35.39	Station 7
"	11.95	34.84	
Between 210 and 287	11.43	35.04	
198	11.40	X	Station 15

Other sources of data for cruise RANRL 30/82

Hamilton, L.J. (1982)

"Cruise Leader's Report for HMAS Kimbla Cruise, RANRL 30/82 (15 April to 6 May 1983)".

(Unpublished document)

Gives temperature cross-sections for Sydney to Hobart, and Hobart to 47°S, 151°30'E with brief discussion

Hamilton, L.J. (1983)

"Comparisons of Sea-Surface Temperature Obtained From Ship and Satellite Data".

RANRL Tech. Memo. (Ext) No. 8/83

Compares SST from HMAS Kimbla XBT with GMS and NOAA satellite derived values. Diagrams of SST versus cumulative ship distance travelled for the Kimbla cruises are available from the author, but not included in the report.

Jeffrey, M.Z. (1984)

"Analyses and Report of Oceanographic Data From HMAS Kimbla Cruises 30/82, 24/83 to South Tasman Sea".

Ocean Sciences Institute Report No.7. The University of Sydney

Contains tables of the Nansen station data with temperature and salinity cross-sections, T-S curves, geostrophic current profiles, and data analysis. (Cruise RANRL 24/83 is a follow up cruise in the same area).

Note: Several erroneous data values are included in the tables - this affects some derived data and cross-sections. The data in the present report has been reworked.

Jeffrey, M.Z. (1986)

"Climatological Features of the Subtropical Convergence in Australian and New Zealand waters".

Ocean Sciences Institute Report No.17. The University of Sydney.

Uses the data for cruises RANRL 30/82 and RANRL 24/83 with historical data to examine the Subtropical Convergence.

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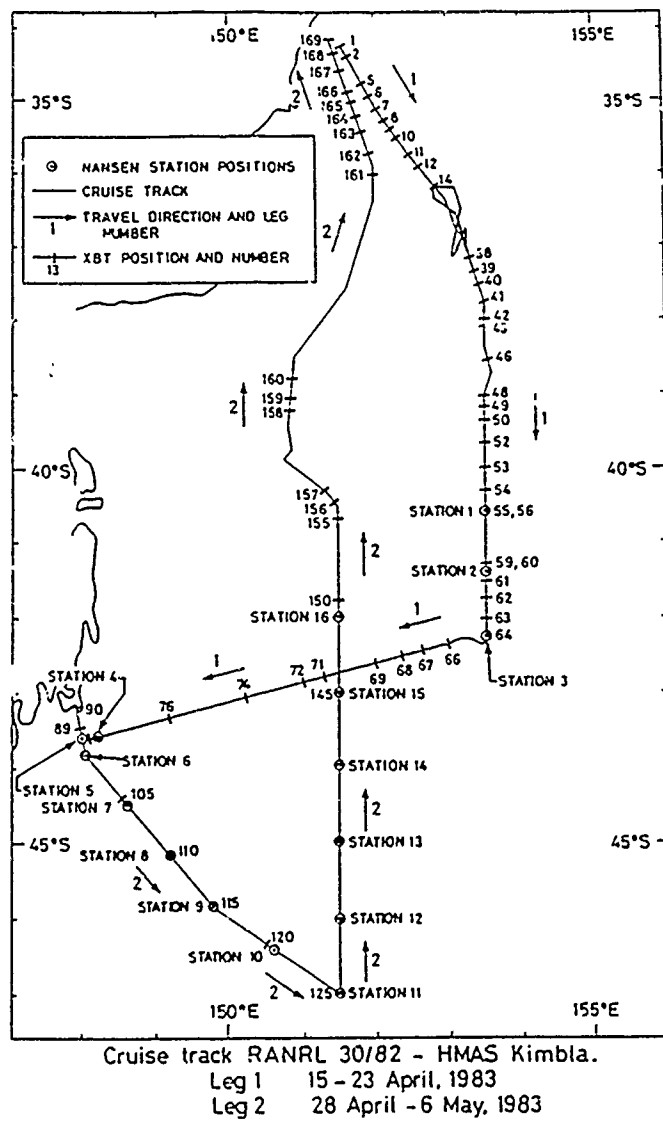


Figure 2. Nansen station positions for survey RANRL 30/82

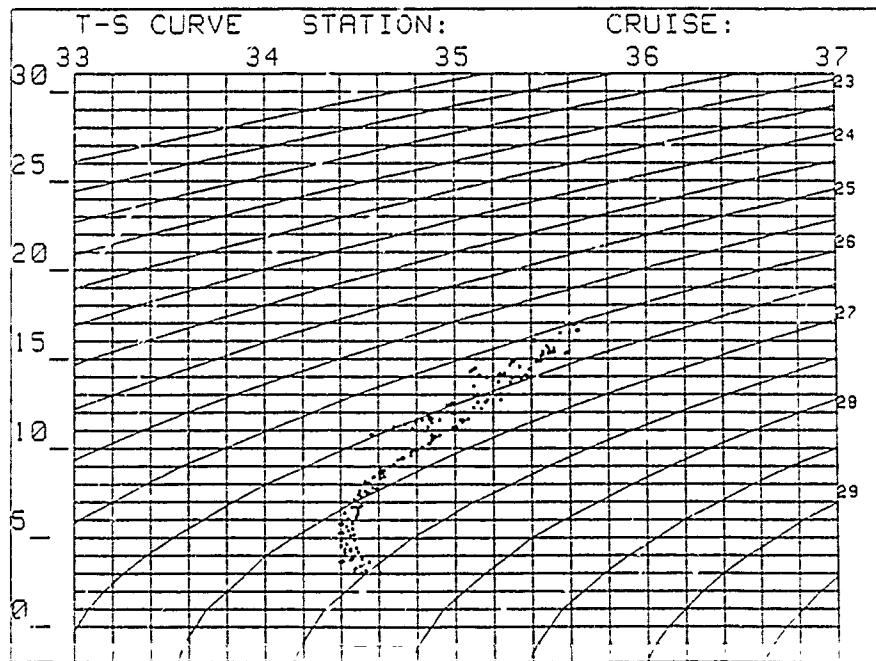
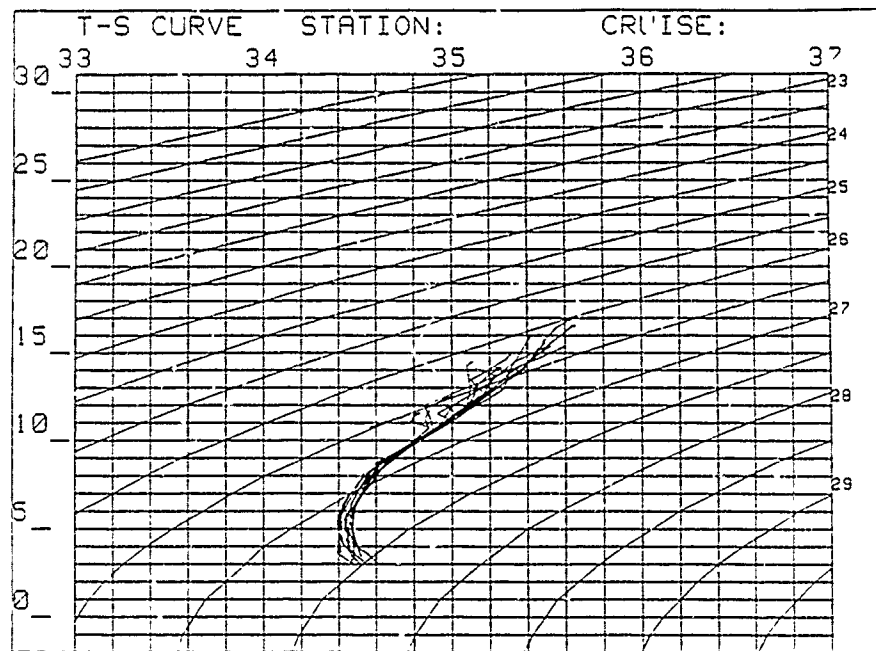
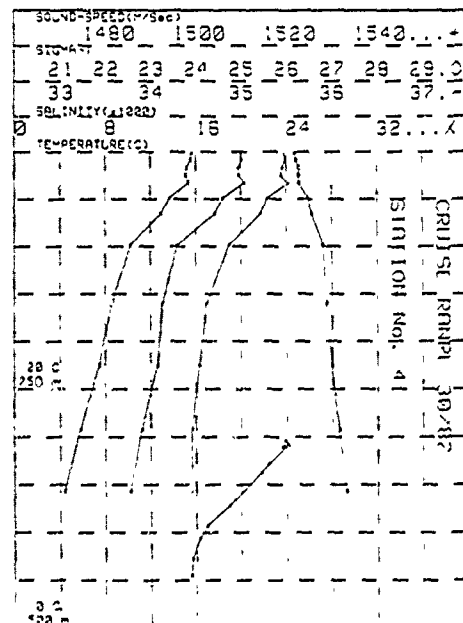
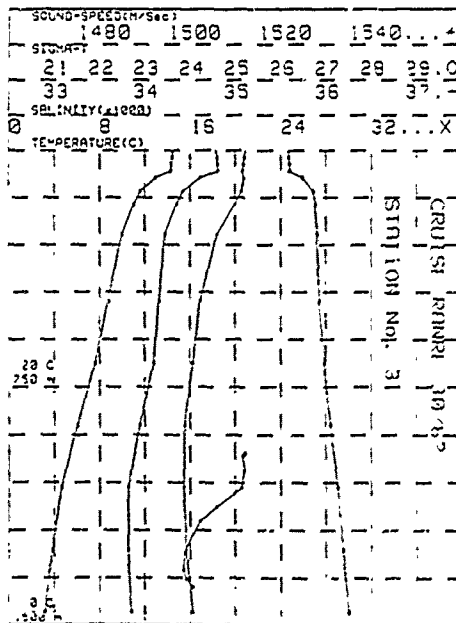
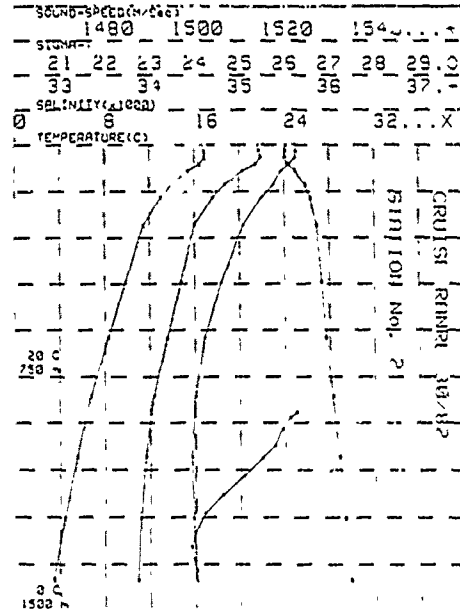
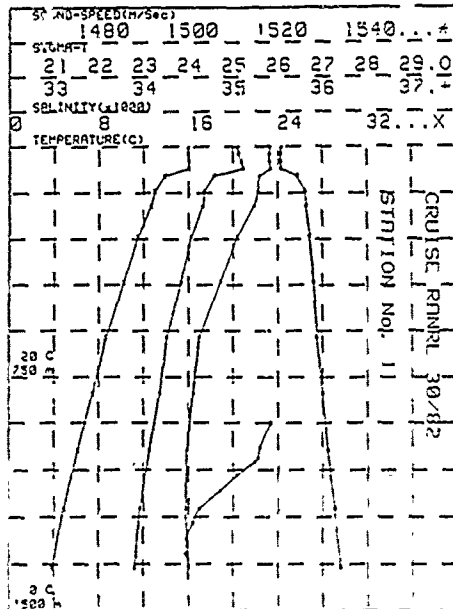


Figure 3. Temperature-salinity curves and scatter plot for cruise RANRL 30/82

STATION 1										STATION 2									
DATE= 19/04/83										DATE= 20/04/83									
TIME= 2342 GHT										TIME= 0610 GHT									
RAWML 30/82										RAWML 30/82									
DEPTH= 4800										DEPTH= 4800									
DEPTH	TEMP	SALINITY	SIGMA-T	A S V	CL/T	ML/L	HC	R/S/Sec	Dyn #	DEPTH	TEMP	SALINITY	SIGMA-T	A S V	CL/T	ML/L	HC	R/S/Sec	Dyn #
m	°C	PPT								m	°C	PPT							
005	0	15.980	35.420	26.078	192.4	0.00	15.98	1911.0	0.000	005	0	16.810	35.630	26.020	197.7	0.00	16.81	1914.0	0.000
005	24	15.990	35.410	26.068	194.1	0.00	15.99	1911.4	0.000	005	21	16.810	35.630	26.020	198.4	0.00	16.81	1914.4	0.000
005	48	16.010	35.410	26.062	199.3	0.00	16.00	1911.8	0.000	005	42	16.800	35.620	26.015	199.8	0.00	16.80	1914.7	0.000
005	72	16.010	35.420	26.069	199.3	0.00	16.00	1912.2	0.000	005	64	16.440	35.590	26.070	199.1	0.00	16.43	1913.6	0.000
005	96	13.910	35.300	26.429	180.7	0.00	13.90	1905.6	0.000	005	86	15.380	35.680	26.243	179.2	0.00	15.37	1910.6	0.000
005	145	13.000	35.280	26.611	145.6	0.00	12.94	1903.6	0.000	005	129	14.040	35.380	26.473	158.4	0.00	14.02	1904.6	0.000
005	183	12.990	35.240	26.642	143.8	0.00	12.94	1903.3	0.000	005	172	13.510	35.240	26.578	149.4	0.00	12.99	1904.0	0.000
005	291	11.330	35.050	26.717	129.6	0.00	11.49	1900.7	0.000	005	200	11.480	35.040	26.715	137.7	0.00	11.49	1900.0	0.000
005	441	10.240	34.840	26.802	123.2	0.00	10.9	1898.3	0.000	005	248	9.880	34.800	26.820	121.2	0.00	9.81	1896.9	0.000
005	622	8.870	34.620	26.873	126.4	0.00	8.80	1893.2	0.000	005	325	8.320	34.610	26.818	123.8	0.00	8.26	1894.0	0.000
005	804	7.480	34.350	26.967	118.1	0.00	7.40	1893.6	0.000	005	415	6.730	34.500	27.082	110.9	0.00	6.65	1890.8	0.000
005	948	6.180	34.480	27.121	109.6	0.00	6.07	1891.4	0.000	005	1008	5.800	34.480	27.188	98.0	0.00	5.40	1888.0	0.000
005	1174	4.880	34.470	27.208	92.0	0.00	4.78	1888.3	0.000	005	1204	4.410	34.480	27.323	85.4	0.00	4.31	1887.8	0.000
005	1362	3.830	34.310	27.414	77.2	0.00	3.72	1886.1	0.000	005	1401	3.480	34.310	27.457	72.4	0.00	3.37	1887.3	0.000
151	0	15.98	35.42	26.078	192.4	0.00	15.98	1911.0	0.000	151	0	16.81	35.63	26.026	197.7	0.00	16.81	1914.0	0.000
151	10	15.98	35.41	26.072	193.2	0.00	15.98	1911.1	0.019	151	10	16.81	35.63	26.020	198.0	0.00	16.81	1914.2	0.020
151	25	15.99	35.41	26.068	194.2	0.00	15.99	1911.4	0.048	151	25	16.81	35.63	26.018	199.1	0.00	16.80	1914.3	0.050
151	50	16.01	35.42	26.062	199.3	0.00	16.00	1911.8	0.087	151	50	16.80	35.62	26.015	199.2	0.00	16.79	1914.5	0.099
151	75	15.98	35.46	26.126	180.0	0.00	15.98	1911.2	1.144	151	75	15.98	35.50	26.101	198.7	0.00	15.87	1912.0	1.148
151	100	14.81	35.10	26.458	190.0	0.00	13.80	1905.6	1.006	151	100	14.81	35.44	26.322	171.1	0.00	14.88	1906.3	0.87
151	150	12.88	35.28	26.614	145.4	0.00	12.89	1903.6	2.986	151	150	13.51	35.21	26.527	153.8	0.00	13.48	1905.4	2.719
151	200	12.88	35.22	26.647	143.4	0.00	12.87	1903.3	1.837	151	200	12.47	35.17	26.628	145.1	0.00	12.44	1902.8	3.848
151	250	11.96	35.12	26.688	140.8	0.00	11.95	1901.7	4.008	151	250	11.63	35.06	26.708	138.0	0.00	11.60	1900.4	4.173
151	300	11.43	35.04	26.728	138.2	0.00	11.41	1900.5	4.748	151	300	11.13	34.98	26.741	136.4	0.00	11.08	1899.3	4.882
151	4	10.32	34.81	26.781	134.3	0.00	10.30	1898.9	8.813	151	400	10.25	34.85	26.798	132.8	0.00	10.20	1897.7	6.626
151	50	9.68	34.78	26.818	132.2	0.00	9.63	1897.1	17.478	151	500	9.29	34.73	26.848	129.4	0.00	9.13	1896.0	7.53
151	600	6.64	34.64	26.862	129.3	0.00	6.77	1895.9	8.878	151	600	6.54	34.63	26.902	125.1	0.00	6.48	1894.4	8.880
151	850	5.31	34.55	26.954	118.4	0.00	7.43	1893.6	1.126	151	800	6.84	34.41	27.051	119.8	0.00	6.77	1891.0	1.118
151	1000	6.07	34.48	27.121	109.7	0.00	5.98	1891.2	1.350	151	1000	5.54	34.46	27.184	98.0	0.00	5.45	1888.0	1.329
151	1300	4.19	34.48	27.387	87.0	0.00	4.08	1888.6	1.832	151	1300	3.94	34.30	27.353	78.0	0.00	3.84	1887.9	1.387

STATION 3										STATION 4									
DATE= 20/04/83										DATE= 22/04/83									
TIME= 1720 GHT										TIME= 0325 GHT									
RAWML 30/82										RAWML 30/82									
DEPTH= 1500										DEPTH= 1500									
DEPTH	TEMP	SALINITY	SIGMA-T	A S V	CL/T	ML/L	HC	R/S/Sec	Dyn #	DEPTH	TEMP	SALINITY	SIGMA-T	A S V	CL/T	ML/L	HC	R/S/Sec	Dyn #
m	°C	PPT								m	°C	PPT							
005	0	14.488	35.110	26.179	183.1	0.00	14.48	1905.8	0.000	005	0	15.998	35.480	26.180	161.8	0.00	15.99	1910.1	0.000
005	25	14.422	35.05	26.174	183.8	0.00	14.43	1906.1	0.000	005	25	15.578	35.490	26.223	179.2	0.00	15.57	1916.7	0.000
005	48	14.330	35.070	26.187	183.1	0.00	14.32	1906.1	0.000	005	48	15.218	35.488	26.281	174.5	0.00	15.20	1909.4	0.000
005	68	14.190	35.062	26.199	183.0	0.00	14.19	1906.2	0.000	005	68	15.150	35.490	26.287	174.7	0.00	15.14	1909.6	0.000
005	87	12.840	35.00	26.463	194.1	0.00	12.83	1902.2	0.000	005	98	13.000	35.520	26.288	175.2	0.00	13.00	1910.8	0.000
005	130	11.820	35.070	26.718	134.8	0.00	11.80	1908.4	0.000	005	147	13.700	35.390	26.475	158.7	0.00	13.68	1904.0	0.000
005	173	11.040	34.990	26.741	131.5	0.00	11.02	1906.8	0.000	005	198	12.970	35.225	26.570	150.8	0.00	12.94	1904.3	0.000
005	248	10.260	34.900	26.800	129.5	0.00	9.9	1894.4	0.000	005	248	10.250	34.878	26.808	129.5	0.00	10.21	1894.6	0.000
005	480	8.740	34.810	26.834	127.2	0.00	8.68	1890.8	0.000	005	480	8.818	34.620	26.863	124.4	0.00	8.74	1888.6	0.000
005	675	7.170	34.530	26.862	119.3	0.00	7.34	1901.8	0.000	005	678	7.490	34.548	26.968	117.0	0.00	7.42	1891.3	0.000
005	870	6.050	34.440	27.124	104.5	0.00	5.97	1888.9	0.000	005	876	5.610	34.480	27.180	101.8	0.00	5.53	1886.1	0.000
005	1064	4.440	34.430	27.184	90.7	0.00	4.35	1888.4	0.000	005	1071	4.360	34.450	27.307	88.0	0.00	4.30	1885.5	0.000
005	1253	3.630	34.480	27.374	74.8	0.00	3.73	1888.6	0.000										
005	1480	3.180	34.530	27.463	1.8	0.00	3.07	1887.0	0.000										
151	0	14.48	35.11	26.179	183.1	0.00	14.48	1905.8	0.000	151	0	15.98	35.48	26.180	161.8	0.00	15.97	1910.1	0.000
151	10	14.48	35.11	26.179	183.8	0.00	14.48	1905.8	0.018	151	10	15.57	35.48	26.180	161.8	0.00	15.57	1910.1	0.018
151	25	14.41	35.10	26.178	182.7	0.00	14.41	1906.1	0.048	151	25	15.37	35.48	26.223	179.2	0.00	15.37	1916.7	0.045
151	50	14.31	35.08	26.190	181.1	0.00	14.31	1906.1	0.082	151	50	15.17	35.48	26.287	174.8	0.00	15.18	1909.7	0.083
151	75	13.81	35.09	26.340	178.5	0.00	13.80	1904.2	1.027	151	100	13.29	35.31	26.299	174.3	0.00	13.28	1910.6	1.070
151	100	12.48	35.12	26.578	147.8	0.00	12.45	1900.8	1.178	151	150	11.67	35.29	26.440	158.2	0.00	11.68	1905.9	2.990
151	150	11.34	35.03	26.796	133.1	0.00	11.32	1897.7	2.448	151	200	11.33	35.61	26.717	137.7	0.00	11.30	1899.0	2.448
151	200	10.70	34.93	26.773	130.8	0.00	10.68	1896.1	3.312	151	250	10.20	34.86	26.818	129.5	0.00	10.18	1895.9	4.198
151	250	10.14	34.83	26.784	129.8	0.00	10.11	1896.8	3.770	151	300	9.29	34.71	26.847	127.2	0.00	9.20	18934	

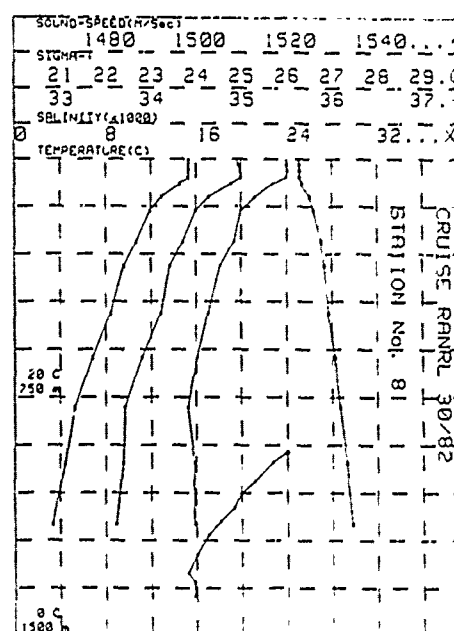
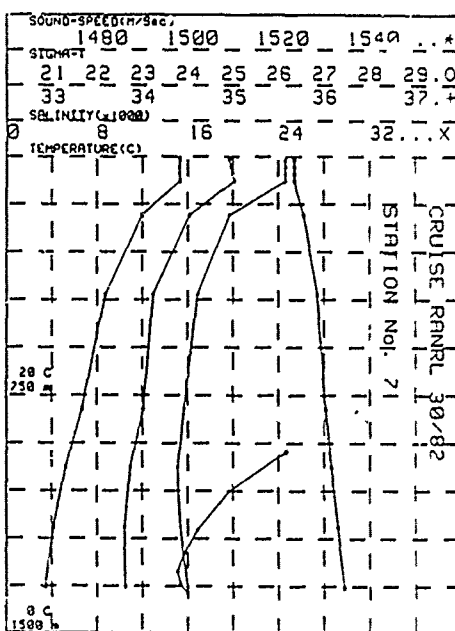
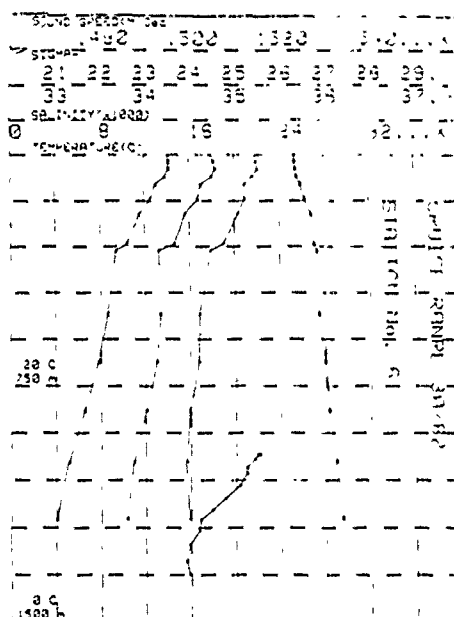
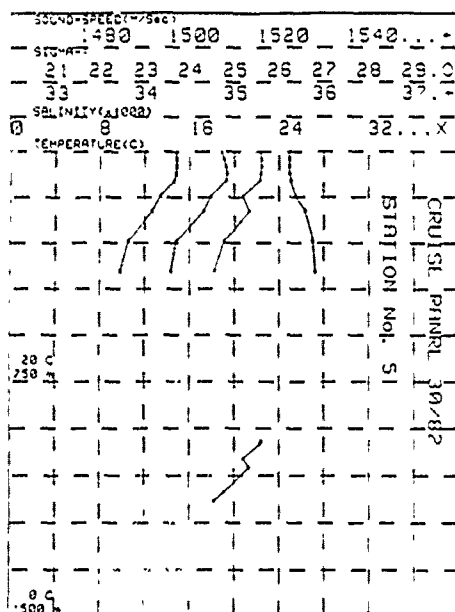


STATION 5 43.378 147.586 RANGE 30/82 DEPTH 500										
DATE= 28/04/83 TIME= 1319 GMT										
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OC	POT.TEMP	S.S	DYN. #	
#	°C	PPT	KG/M ³	PSU	°C	KG/M ³	°C	KG/M ³		
0	14.850	35.300	26.217	177.2	0.00	14.86	1907.3			
25	14.870	35.310	26.240	177.6	0.00	14.87	1907.8			
50	14.878	35.310	26.240	178.3	0.00	14.88	1908.2			
75	14.850	35.300	26.241	178.8	0.00	14.85	1908.4			
100	14.850	35.290	26.219	178.6	0.00	14.84	1908.2			
125	14.850	35.290	26.240	178.6	0.00	14.85	1908.4			
150	14.850	35.290	26.240	178.6	0.00	14.85	1908.4			
175	14.850	35.290	26.240	178.6	0.00	14.85	1908.4			
200	14.850	35.290	26.240	178.6	0.00	14.85	1908.4			
225	14.850	35.290	26.240	178.6	0.00	14.85	1908.4			
250	14.850	35.290	26.240	178.6	0.00	14.85	1908.4			
275	14.850	35.290	26.240	178.6	0.00	14.85	1908.4			
300	14.850	35.290	26.240	178.6	0.00	14.85	1908.4			

STATION 6 43.448 148.026 RANGE 30/82 DEPTH 1550										
DATE= 28/04/83 TIME= 1546 GMT										
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OC	POT.TEMP	S.S	DYN. #	
#	°C	PPT	KG/M ³	PSU	°C	KG/M ³	°C	KG/M ³		
0	14.120	35.230	26.348	187.4	0.00	14.12	1504.9			
25	14.140	35.240	26.344	187.7	0.00	14.14	1505.2			
50	14.140	35.240	26.344	187.0	0.00	14.13	1505.8			
75	13.780	35.200	26.387	185.0	0.00	13.78	1504.9			
100	13.020	35.120	26.463	184.3	0.00	13.01	1502.7			
125	12.590	35.120	26.578	184.8	0.00	12.53	1501.9			
150	11.520	35.040	26.711	186.8	0.00	11.50	1499.1			
175	10.440	34.880	26.782	181.9	0.00	10.40	1486.8			
200	9.430	34.730	26.837	178.6	0.00	9.38	1483.1			
225	8.520	34.600	26.865	177.2	0.00	8.54	1483.2			
250	7.740	34.500	26.911	175.0	0.00	7.67	1482.3			
275	6.530	34.480	27.061	168.0	0.00	6.45	1480.2			
300	5.130	34.430	27.224	164.6	0.00	5.05	1487.2			
325	4.030	34.480	27.368	160.3	0.00	3.94	1486.7			
350	14.12	35.23	26.340	187.4	0.00	14.12	1504.9	0.000		
375	14.13	35.23	26.340	187.6	0.00	14.13	1505.1	0.017		
400	14.14	35.24	26.344	187.7	0.00	14.14	1505.4	0.042		
425	14.13	35.24	26.344	187.6	0.00	14.13	1505.8	0.064		
450	13.72	35.19	26.395	184.2	0.00	13.70	1504.7	0.129		
475	13.01	35.12	26.466	184.2	0.00	13.00	1502.7	0.195		
500	12.45	35.11	26.508	187.8	0.00	12.43	1501.8	0.241		
525	11.44	35.03	26.718	186.8	0.00	11.44	1498.9	0.312		
550	10.81	34.99	26.751	184.1	0.00	10.80	1487.7	0.380		
575	10.10	34.83	26.801	180.1	0.00	10.08	1489.4	0.444		
600	9.13	34.68	26.848	178.9	0.00	9.10	1483.2	0.573		
625	8.72	34.61	26.882	177.2	0.00	8.67	1483.3	0.700		
650	8.28	34.59	26.836	171.7	0.00	8.14	1483.1	0.829		
675	8.77	34.50	27.080	171.0	0.00	8.70	1480.7	1.057		
700	9.08	34.45	27.230	161.2	0.00	8.99	1487.1	1.243		

STATION 7 44.113 148.386 RANGE 30/82 DEPTH 3850										
DATE= 28/04/83 TIME= 0047 GMT										
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OC	POT.TEMP	S.S	DYN. #	
#	°C	PPT	KG/M ³	PSU	°C	KG/M ³	°C	KG/M ³		
0	15.250	35.190	26.250	184.4	0.00	15.25	1509.2			
25	15.300	35.190	26.333	184.4	0.00	15.30	1509.2			
50	15.290	35.190	26.354	184.0	0.00	15.29	1509.9			
75	15.300	35.190	26.333	187.8	0.00	15.29	1510.0			
100	15.300	35.190	26.353	184.5	0.00	15.29	1510.3			
125	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
150	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
175	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
200	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
225	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
250	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
275	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
300	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
325	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
350	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
375	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
400	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
425	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
450	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
475	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
500	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
525	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
550	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
575	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
600	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
625	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
650	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
675	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
700	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
725	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
750	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
775	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
800	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
825	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
850	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
875	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
900	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
925	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
950	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
975	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			
1000	15.290	35.190	26.353	184.5	0.00	15.29	1510.3			

STATION 8 45.098 149.136 RANGE 30/82										
DATE= 28/04/83 TIME= 2122 GMT DEPTH= 4200										
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OC	POT.TEMP	S.S	DYN. #	
#	°C	PPT	KG/M ³	PSU	°C	KG/M ³	°C	KG/M ³		
0	15.340	35.190	26.278	173.2	0.00	15.34	1509.1			
25	15.350	35.200	26.281	173.6	0.00	15.35	1509.4			
50	15.350	35.210	26.286	173.5	0.00	15.34	1509.8			
75	15.300	35.180	26.284	174.3	0.00	15.29	1509.9			
100	14.340	35.140	26.335	170.2	0.00	14.33	1507.7			
125	12.850	35.150	26.528	183.6	0.00	12.83	1502.9			
150	11.830	35.000	26.603	183.5	0.00	11.83	1499.9			
175	10.700	34.820	26.786	182.8	0.00	10.67	1487.1			
200	9.940	34.770	26.842	182.6	0.00	9.93	1484.2			
225	9.430	34.630	26.928	182.3	0.00	9.42	1481.3			
250	8.920	34.490	27.014	182.0	0.00	8.91	1478.4			
275	8.410	34.350	27.100	181.7	0.00	8.40	1475.5			
300	7.900	34.210	27.187	181.3	0.00	7.89	1472.6			
325	7.390	34.070	27.273	181.0	0.00	7.38	1469.7			
350	6.880	33.930	27.360	180.7	0.00	6.87	1466.8			
375	6.370	33.790	27.446	180.4	0.00	6.36	1463.9			
400	5.860	33.650	27.533	180.1	0.00	5.85	1461.0			
425	5.350	33.510	27.619	179.8	0.00	5.34	1458.1			
450	4.840	33.370	27.706	179.5	0.00	4.83	1455.2			
475	4.330	33.230	27.792	179.2	0.00	4.32	1452.3			
500	3.820	33.090	27.879	178.9	0.00	3.81	1449.4			
525	3.310	32.950	27.965	178.6	0.00	3.30	1446.5			
550	2.800	32.810	28.052	178.3	0.00	2.79	1443.6			
575	2.290	32.670	28.138	178.0	0.00	2.28	1440.7			
600	1.780	32.530	28.225	177.7	0.00	1.77	1437.8			
625	1.270	32.390	28.311	177.4	0.00	1.26	1434.9			
650	0.760	32.250	28.398	177.1	0.00	0.75	1432.0			
675	0.250	32.110	28.484	176.8	0.00	0.24	1429.1			
700	-0.260	31.970	28.571	176.5	0.00	-0.25	1426.2			
725	-0.770	31.830	28.657	176.2	0.00	-0.76	1423.3			
750	-1.280	31.690	28.744	175.9	0.00	-1.27	1420.4			
775	-1.790	31.550	28.830	175.6	0.00	-1.78	1417.5			
800	-2.300	31.410	28.917	175.3	0.00	-2.29	1414.6			
825	-2.810	31.270	29.003	175.0	0.00	-2.80	1411.7			
850	-3.320	31.130	29.090	174.7	0.00	-3.31	1408.8			
875	-3.830	30.990	29.176	174.4	0.00	-3.82	1405.9			
900	-4.340	30.850	29.263	174.1	0.00	-4.33	1403.0			
925	-4.850	30.710	29.349	173.8	0.00	-4.84	1400.1			
950	-5.360	30.570	29.436	173.5	0.00	-5.35	1397.2			
975	-5.870	30.430	29.522	173.2	0.00	-5.86	1394.3			
1000	-6.380	30.290	29.609	172.9	0.00	-6.37	1391.4			



STATION 9 45.508 140.486 RANGE 30/82
DATE= 28/04/83 TIME= 1952 GHT DEPTH= 4700

DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. a
m	°C	Ppt	CL/T	ML/L	°C	ML/Sec		
0	10.748	34.540	26.480	154.1	0.00	10.74	1482.3	
21	10.750	34.570	26.486	154.0	0.00	10.75	1482.9	
43	11.170	34.680	26.496	153.8	0.00	11.16	1484.8	
130	11.340	34.740	26.511	154.2	0.00	11.32	1487.0	
150	10.74	34.54	26.480	154.1	0.00	10.74	1482.3	0.000
151	10.74	34.54	26.482	154.1	0.00	10.74	1482.5	-0.015
152	10.84	34.58	26.486	153.9	0.00	10.83	1482.3	-0.030
153	11.27	34.71	26.498	153.8	0.00	11.27	1486.4	-0.077
154	11.23	34.78	26.506	153.8	0.00	11.22	1486.7	-0.113
155	11.28	34.72	26.510	154.0	0.00	11.27	1486.3	-0.154

STATION 10 46.248 150.296 RANGE 30/82
DATE= 28/04/83 TIME= 1818 LOCAL DEPTH= 4800

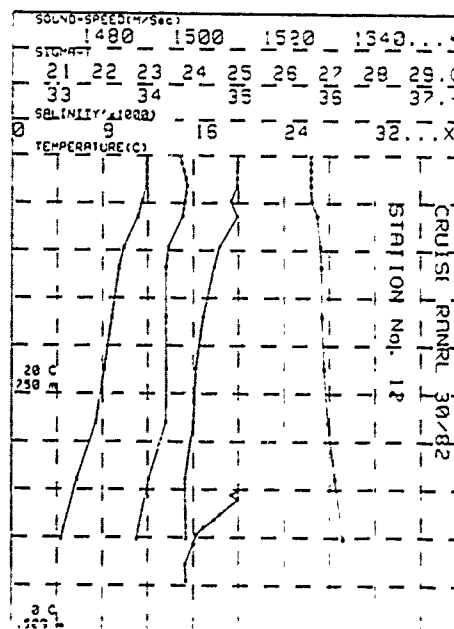
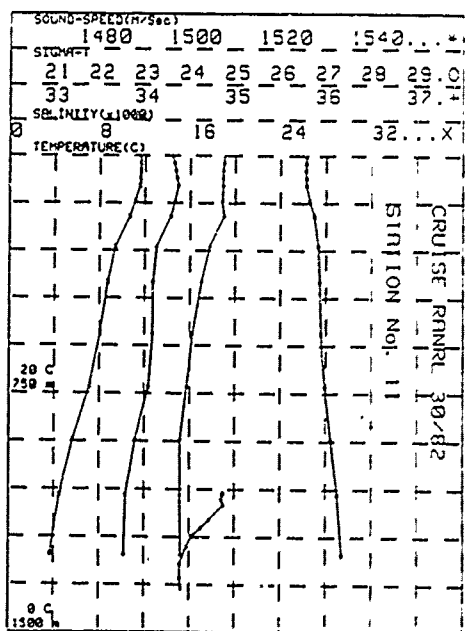
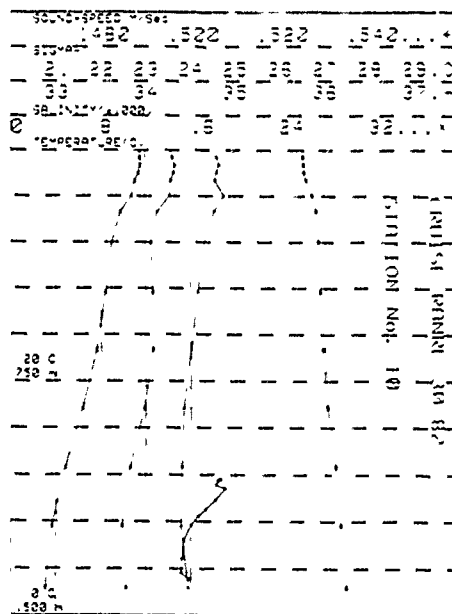
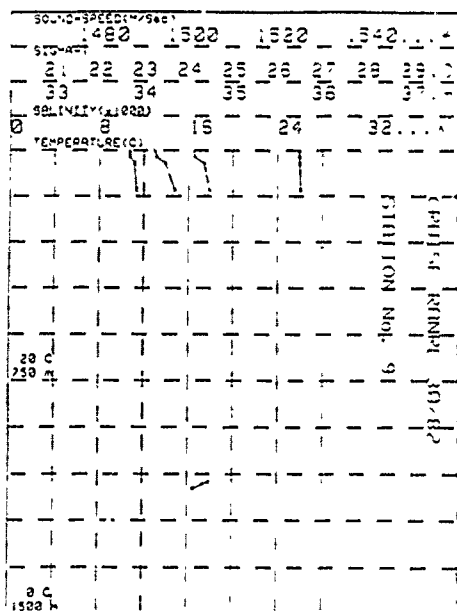
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. a
m	°C	Ppt	CL/T	ML/L	°C	ML/Sec		
0	11.530	34.800	26.523	150.0	0.00	11.53	1495.8	
25	11.530	34.800	26.523	150.0	0.00	11.53	1496.0	
50	11.570	34.830	26.539	149.7	0.00	11.56	1496.6	
75	11.586	34.800	26.546	149.3	0.00	11.58	1496.3	
100	11.098	34.780	26.509	148.1	0.00	11.08	1495.7	
150	10.780	34.880	26.729	134.2	0.00	10.74	1495.4	
201	8.788	34.770	26.610	127.0	0.00	8.78	1482.6	
201	8.985	34.680	26.654	124.5	0.00	8.96	1481.2	
463	8.388	34.588	26.605	124.1	0.00	8.34	1481.3	
640	7.620	34.500	26.637	121.3	0.00	7.59	1481.3	
838	6.378	34.420	27.047	112.0	0.00	6.29	1480.6	
1028	4.640	34.400	27.218	95.1	0.00	4.75	1484.8	
1214	3.840	34.380	27.337	82.3	0.00	3.55	1484.7	
1412	3.080	34.470	27.457	71.0	0.00	2.96	1483.6	
151	11.53	34.80	26.523	150.0	0.00	11.53	1495.8	0.000
152	11.53	34.80	26.523	150.3	0.00	11.53	1495.7	0.013
153	11.53	34.80	26.523	150.6	0.00	11.53	1496.0	0.036
154	11.57	34.83	26.538	149.7	0.00	11.56	1496.6	0.075
155	11.58	34.80	26.540	149.3	0.00	11.58	1496.3	0.113
156	11.08	34.78	26.506	148.1	0.00	11.08	1495.7	0.149
157	10.78	34.88	26.729	134.2	0.00	10.74	1495.4	0.220
158	8.80	34.77	26.609	127.1	0.00	8.77	1482.6	0.285
159	8.34	34.71	26.634	125.6	0.00	8.32	1481.7	0.348
160	7.60	34.64	26.653	124.3	0.00	7.56	1481.2	0.411
161	6.83	34.61	26.671	124.4	0.00	6.80	1481.4	0.475
162	6.18	34.56	26.691	123.8	0.00	6.22	1481.5	0.539
163	5.62	34.52	26.618	122.2	0.00	5.61	1481.5	0.602
164	5.05	34.43	27.020	114.3	0.00	5.07	1480.1	0.665
165	4.48	34.40	27.197	107.1	0.00	4.49	1480.9	0.728
166	3.90	34.41	27.380	97.3	0.00	3.91	1484.7	0.791

STATION 11 47.018 151.32E RANGE 30/82
DATE= 30/04/83 TIME= 1540 GHT DEPTH= 4900

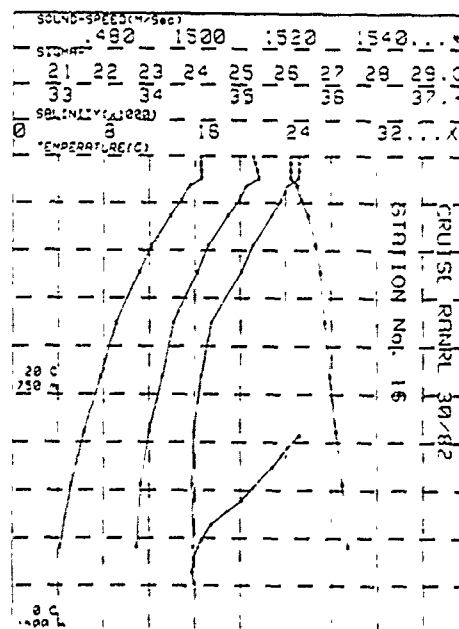
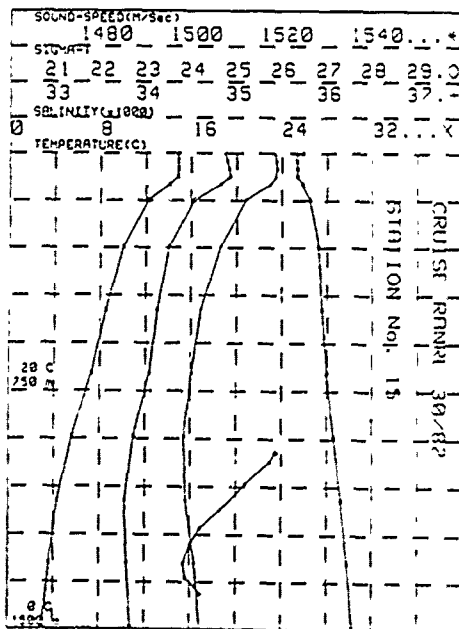
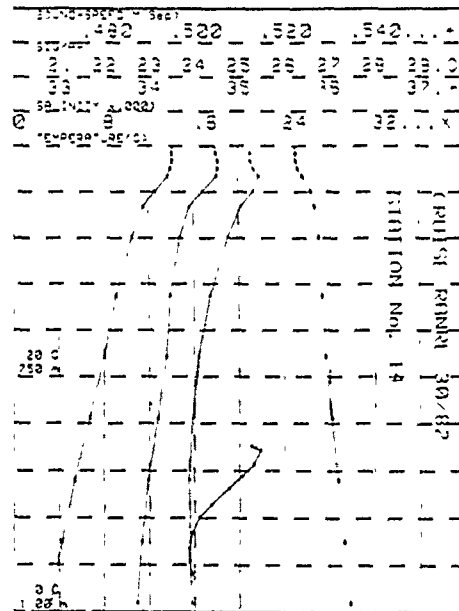
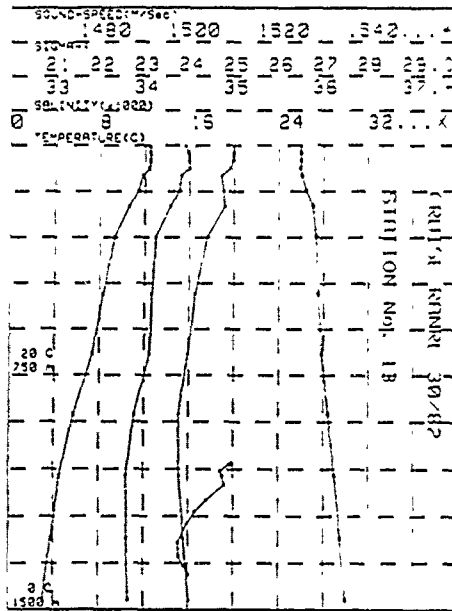
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. a
m	°C	Ppt	CL/T	ML/L	°C	ML/Sec		
0	11.630	34.880	26.546	145.0	0.00	11.63	1496.0	
24	11.670	34.880	26.558	147.2	0.00	11.67	1496.6	
48	11.660	34.878	26.555	146.2	0.00	11.64	1496.9	
72	11.610	34.878	26.542	146.0	0.00	11.60	1487.1	
96	11.590	34.870	26.544	146.2	0.00	11.58	1487.5	
120	11.196	34.880	26.636	142.5	0.00	11.14	1496.7	
144	10.870	34.880	26.742	133.6	0.00	10.86	1495.6	
168	9.420	34.720	26.831	126.8	0.00	9.38	1482.6	
192	8.730	34.632	26.868	124.6	0.00	8.71	1481.0	
216	8.090	34.530	26.886	124.3	0.00	8.08	1481.6	
240	7.440	34.470	26.962	115.8	0.00	7.07	1480.9	
264	6.730	34.400	27.113	105.4	0.00	6.66	1480.0	
288	6.020	34.400	27.254	91.4	0.00	6.43	1485.9	
312	5.360	34.410	27.348	81.8	0.00	5.38	1486.6	
151	11.63	34.88	26.546	145.0	0.00	11.63	1496.0	0.000
152	11.65	34.88	26.563	146.5	0.00	11.63	1496.3	0.013
153	11.67	34.88	26.558	147.3	0.00	11.67	1496.6	0.037
154	11.66	34.87	26.556	146.1	0.00	11.64	1496.9	0.074
155	11.61	34.87	26.543	146.2	0.00	11.60	1487.2	0.111
156	11.58	34.87	26.571	147.9	0.00	11.54	1487.4	0.148
157	11.10	34.87	26.663	141.2	0.00	11.08	1486.6	0.220
158	10.54	34.88	26.751	132.6	0.00	10.52	1489.4	0.288
159	9.84	34.77	26.802	126.6	0.00	9.81	1483.6	0.354
160	9.34	34.71	26.836	126.4	0.00	9.31	1482.5	0.418
161	8.75	34.63	26.868	124.6	0.00	8.71	1481.0	0.484
162	8.06	34.58	26.878	124.6	0.00	8.30	1481.6	0.548
163	7.40	34.52	26.911	123.5	0.00	7.64	1481.6	0.612
164	6.82	34.43	27.036	112.7	0.00	6.64	1480.6	0.676
165	6.25	34.40	27.204	96.3	0.00	6.06	1486.3	0.739

STATION 12 46.018 151.32E RANGE 30/82
DATE= 01/05/83 TIME= 1432 GHT DEPTH= 4800

DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. a
m	°C	Ppt	CL/T	ML/L	°C	ML/Sec		
0	11.918	34.990	26.599	142.8	0.00	11.91	1487.1	
23	11.910	34.980	26.599	143.4	0.00	11.91	1487.3	
48	11.920	34.990	26.597	144.2	0.00	11.91	1486.0	
72	11.920	34.980	26.595	145.0	0.00	11.92	1486.4	
96	11.910	34.980	26.599	145.2	0.00	11.90	1486.7	
120	11.538	34.828	26.613	143.0	0.00	11.53	1486.2	
144	11.158	34.898	26.741	133.8	0.00	11.12	1487.7	
168	9.888	34.798	26.807	129.2	0.00	9.86	1484.5	
192	9.480	34.730	26.829	128.2	0.00	9.44	1484.0	
216	8.638	34.610	26.840	129.6	0.00	8.77	1484.0	
240	8.192	34.530	26.881	127.9	0.00	8.09	1484.0	
264	7.420	34.500	26.966	121.5	0.00	7.33	1483.6	
288	5.778	34.410	27.113	106.7	0.00	5.60	1480.2	
312	4.350	34.430	27.288	86.8	0.00	4.25	1487.3	
151	11.91	34.99	26.599	142.8	0.00	11.91	1487.1	0.000
152	11.91	34.99	26.599	143.0	0.00	11.91	1487.3	0.014
153	11.91	34.98	26.598	143.4	0.00	11.91	1487.0	0.036
154	11.92	34.98	26.597	144.2	0.00	11.92	1486.0	0.072
155	11.93	34.98	26.596	145.0	0.00	11.92	1486.5	0.108
156	11.88	34.98	26.608	145.2	0.00	11.87	1486.7	0.144
157	11.52	34.83	26.629	143.6	0.00	11.50	1486.2	0.217
158	11.03	34.87	26.747	133.4	0.00	11.01	1487.3	0.286
159	10.32	34.86	26.788	130.7	0.00	10.29	1486.4	0.352
160	9.42	34.78	26.811	129.0	0.00	9.79	1484.4	0.417
161	8.78	34.68	26.829	128.3	0.00	8.74	1484.6	0.483
162	8.07	34.62	26.838	129.6	0.00	8.02	1484.0	0.548
163	7.47	34.58	26.856	129.2	0.00	7.40	1484.0	0.612
164	7.06	34.51	26.940	123.8	0.00	7.59	1483.8	0.676
165	5.82	34.41	27.101	108.2	0.00	5.82	1480.5	0.739



STATION 13										STATION 14									
DATE= 30/04/83		43.000		151.31E		RAWRL 30/82		DEPTH= 4500		DATE= 01/05/83		43.996		151.29E		RAWRL 30/82		DEPTH= 4200	
TIME= 1430 DMT										TIME= 2255 DMT									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CI	POT-TEMP	S.S			DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CI	POT-TEMP	S.S		
m	°C	Pct	CL/T	ML/L	°C	M/Sec	Dyn.m			m	°C	Pct	CL/T	ML/L	°C	M/Sec	Dyn.m		
000	0	12.440	34.990	26.580	153.3	0.00	12.48	1499.1		000	0	14.100	35.130	26.267	174.3	0.00	14.10	1504.7	
000	25	12.440	34.990	26.580	153.3	0.00	12.48	1499.1		000	25	14.000	35.130	26.276	174.2	0.00	14.00	1504.8	
000	48	12.450	34.980	26.607	154.7	0.00	12.48	1499.1		000	50	14.000	35.130	26.276	174.9	0.00	14.00	1505.4	
000	74	12.390	34.980	26.623	155.7	0.00	12.38	1500.0		000	75	13.8	35.170	26.332	170.3	0.00	13.8	1505.4	
000	99	11.950	34.860	26.519	152.8	0.00	11.78	1498.2		000	100	13.800	35.230	26.431	181.6	0.00	13.8	1505.1	
000	119	11.410	34.880	26.607	161.8	0.00	11.38	1497.7		000	119	12.150	35.180	26.907	145.9	0.00	12.15	1502.0	
000	149	10.620	34.800	26.764	173.4	0.00	10.90	1498.6		000	109	11.150	35.030	26.988	136.2	0.00	11.15	1499.2	
000	190	9.330	34.700	26.830	194.8	0.00	9.80	1492.4		000	190	10.490	34.680	26.774	133.6	0.00	10.49	1496.8	
000	485	6.350	34.570	26.863	124.6	0.00	6.30	1491.7		000	485	6.050	34.680	26.853	128.2	0.00	6.04	1494.7	
000	880	7.410	34.486	26.990	119.0	0.00	7.34	1491.2		000	880	6.090	34.530	26.913	124.9	0.00	7.08	1493.8	
000	1176	5.773	34.390	27.100	104.1	0.00	5.80	1491.8		000	804	6.730	34.480	27.044	113.4	0.00	6.49	1491.8	
000	1072	4.350	34.400	27.200	91.8	0.00	4.44	1486.1		000	1080	5.300	34.440	27.136	100.0	0.00	5.30	1488.7	
000	1270	3.770	34.430	27.372	80.1	0.00	3.67	1486.2		000	1278	4.250	34.430	27.233	86.2	0.00	4.15	1486.3	
000	1448	3.058	34.310	27.498	66.3	0.00	2.94	1486.8		000	1472	3.220	34.470	27.442	73.4	0.00	3.11	1487.3	
15L	0	12.48	34.99	26.488	153.3	0.00	12.48	1499.1	0.000	15L	0	14.10	35.13	26.267	174.3	0.00	14.10	1504.7	0.000
15L	10	12.48	34.99	26.488	153.3	0.00	12.48	1499.3	.015	15L	10	14.08	35.13	26.272	174.2	0.00	14.08	1504.8	0.7
15L	25	12.48	34.99	26.488	153.3	0.00	12.48	1499.3	.036	15L	25	14.08	35.13	26.276	174.2	0.00	14.08	1504.8	.344
15L	50	12.45	34.96	26.495	154.8	0.00	12.46	1499.6	.077	15L	50	14.00	35.13	26.279	174.9	0.00	14.00	1505.4	.087
15L	75	11.36	34.99	26.485	155.8	0.02	11.23	1496.9	.116	15L	75	13.84	35.17	26.332	170.3	0.00	13.8	1505.4	.120
15L	100	11.80	34.86	26.520	152.8	0.00	11.78	1498.2	.154	15L	100	13.86	35.23	26.431	181.6	0.00	13.86	1505.1	.172
15L	130	11.30	34.88	26.611	165.2	0.00	11.27	1497.7	.228	15L	130	12.53	35.18	26.909	145.7	0.00	12.51	1501.7	.249
15L	200	10.60	34.80	26.717	171.4	0.00	10.58	1498.7	.298	15L	200	10.44	35.03	26.988	136.2	0.00	10.44	1499.2	.320
15L	250	9.89	34.78	26.802	178.8	0.00	9.86	1493.8	.363	15L	250	10.44	34.99	26.740	133.2	0.00	10.44	1497.8	.388
15L	300	9.32	34.70	26.831	178.9	0.00	9.79	1492.4	.427	15L	300	10.47	34.88	26.775	132.8	0.00	10.44	1496.9	.455
15L	400	8.78	34.62	26.837	172.9	0.00	8.74	1492.4	.535	15L	400	9.86	34.78	26.819	130.2	0.00	9.85	1493.5	.567
15L	500	8.20	34.56	26.867	174.9	0.00	8.19	1491.6	.678	15L	500	9.04	34.67	26.856	128.0	0.00	8.98	1490.6	.719
15L	600	7.88	34.53	26.931	172.6	0.00	7.82	1491.4	.801	15L	600	8.34	34.60	26.878	126.4	0.00	8.47	1494.3	.843
15L	800	8.36	34.42	27.044	171.7	0.00	7.86	1493.9	1.038	15L	800	7.29	34.51	26.898	118.5	0.03	7.21	1492.7	1.090
15L	1000	4.95	34.38	27.196	98.8	0.00	4.96	1486.5	1.545	15L	1000	5.91	34.45	27.129	105.5	0.00	5.82	1490.5	1.314
15L	1300	3.86	34.48	27.393	78.3	0.00	3.96	1486.3	1.907	15L	1308	4.12	34.45	27.338	84.6	0.00	4.01	1490.2	1.999



Cruise RANRL 23/83*Notes for cruise RANRL 23/83*

The poor bottle spacings in near surface waters for stations 1 and 2 were caused by a faulty digital wire out meter on the winch, which read less than the actual wire length paid out. Onboard processing of DSRT data allowed repair of the meter for following stations. Bottle spacing for these and several other stations is often too large to properly define the higher gradients of parameters in upper waters.

The density (sigma-t) values for station 2 at 200 m and 247 m are very close but all values seemed good. Density at 686 m in station 6 looks high but no obvious errors in data are seen, although the T-S curve indicates that salinity may be too high. However the T-S point lies in the limits for Banda Sea water shown on a diagram by Rochford (1969). The surface salinity value seems high for station 9, but is left unchanged.

Other sources of data for cruise 23/83

Hamilton, L.J. (1985)

"Data Report for RANRL Oceanographic Cruise No. 23/83 (May/June 1983 - East Indian Ocean)".

RANRL Tech. Memo (External) No.7/85

Includes XBT cross-sections, geostrophic current profiles, SST fields, satellite imagery and routine data analysis.

Hamilton, L.J. (1987)

"Oceanographic Features of the East and South-east Indian Ocean for June 1983".

RANRL Tech. Memo (External) No.3/87

Couples drifting buoy, satellite, and data from eight other vessels for a quasi-synoptic description of surface currents and temperature fields. Briefly evaluates usefulness of satellite infra-red imagery for the area.

Scott, B.D. (1983)

"RAN Research Laboratory Oceanographic Cruise Report".

Cook Oceanographic Cruise No.1. RANRL 23/83 (Unpublished document).

A narrative of the actual cruise.

Dr. Stella Humphries

Took nutrient samples and Secchi dish measurements at Nansen station sites, but results are unknown.

Dr. J. Veevers of Macquarie University

Published papers relating to magnetometer and seismic profiling measurements made during the cruise.

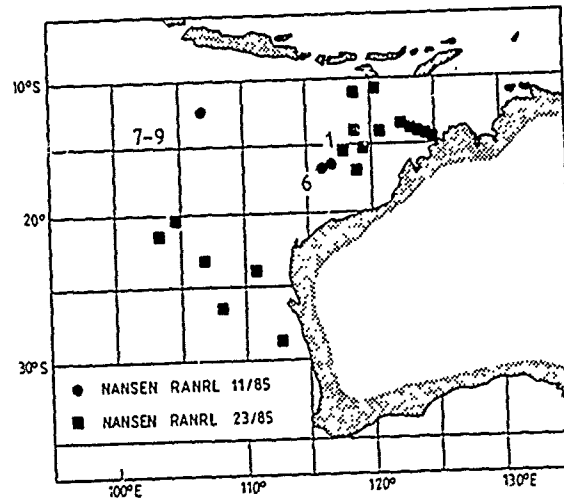


Figure 4. Nansen station positions for cruise RANRL 23/83

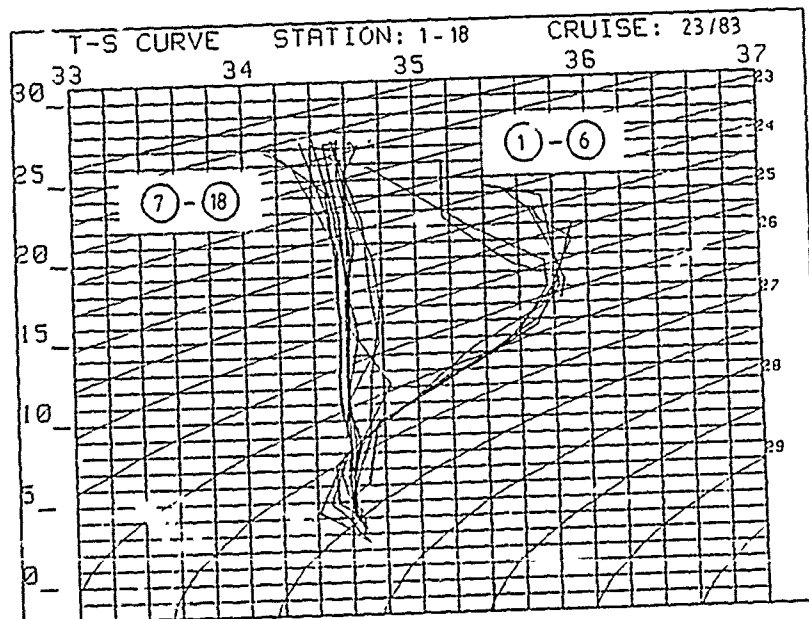


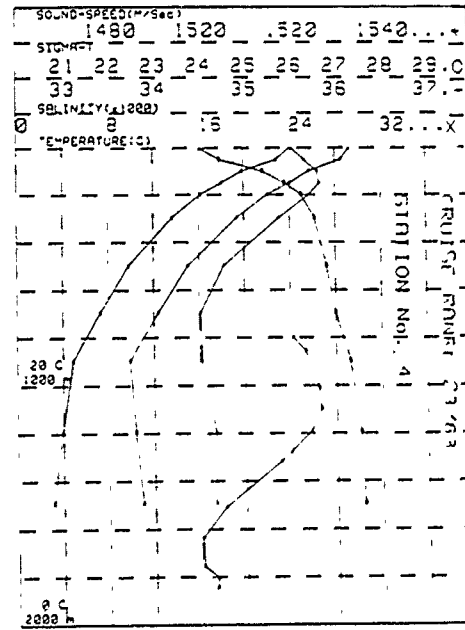
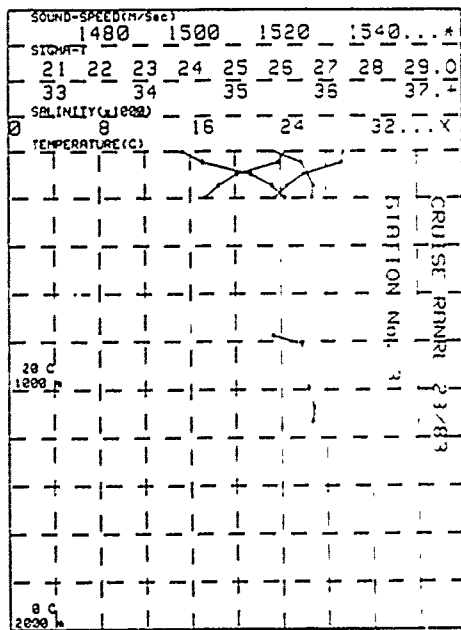
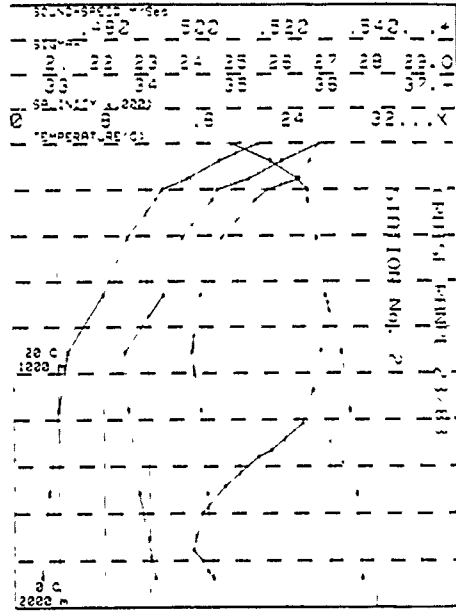
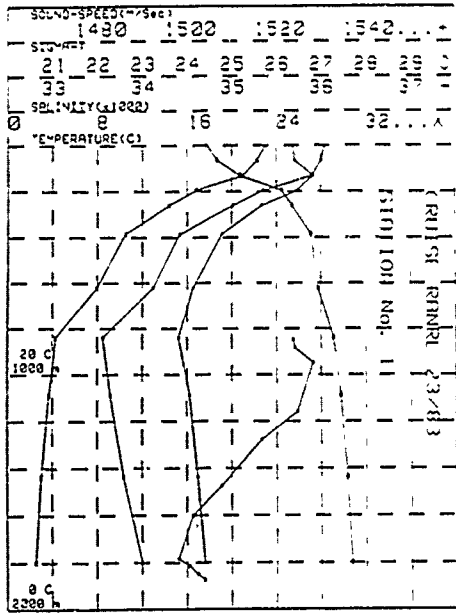
Figure 5. Temperature-salinity curves for survey RANRL 23/83

STATION 1 DATE= 24/05/1983										
TIME= 1350GMT										
RAWPL 23/83										
DEPTH= 9999										
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S			
m	°C	Ppt	CL/T	ML/L	°C	°C	M/Sec	Dyn #		
088	0	23.040	35.687	24.445	347.8	0.00	23.04	1530.9	0.000	
088	65	23.000	35.709	24.473	329.3	0.00	22.29	1530.1		
088	131	21.020	35.911	25.184	282.1	0.00	20.99	1578.1		
088	196	18.810	35.733	24.123	194.3	0.00	16.78	1517.1		
088	262	14.430	35.339	24.355	173.5	0.00	14.38	1510.3		
088	368	10.310	34.961	24.779	134.4	0.00	10.44	1496.4		
088	622	7.970	34.560	24.838	121.4	0.00	7.91	1492.5		
088	840	4.320	34.410	27.283	86.0	0.00	4.25	1481.3		
088	1048	3.700	34.329	27.442	71.9	0.00	3.62	1483.8		
088	1417	2.990	34.620	27.583	59.3	0.00	2.88	1485.9		
088	1800	2.500	34.900	27.669	49.8	0.00	2.37	1490.1		
ISL	0	23.04	35.68	24.445	347.8	0.00	23.04	1530.9	0.000	
ISL	10	22.98	35.68	24.442	346.4	0.00	22.94	1530.8	.035	
ISL	25	22.82	35.70	24.501	343.3	0.00	22.61	1530.7	.086	
ISL	50	22.52	35.70	24.597	335.1	0.00	22.31	1530.4	.170	
ISL	75	22.31	35.78	24.722	324.1	0.00	22.28	1529.8	.252	
ISL	100	21.82	35.86	24.868	309.2	0.00	21.98	1529.0	.330	
ISL	150	19.80	35.88	25.531	249.5	0.00	19.57	1524.4	.472	
ISL	200	16.68	35.71	26.137	183.0	0.00	16.43	1518.7	.584	
ISL	250	14.85	35.40	26.513	177.3	0.00	14.61	1511.8	.678	
ISL	300	13.04	35.18	26.510	159.1	0.00	13.00	1504.0	.761	
ISL	400	10.40	34.87	26.782	134.3	0.00	10.38	1498.2	.907	
ISL	500	8.47	34.71	26.828	121.4	0.00	8.41	1494.3	1.038	
ISL	600	6.27	34.59	26.613	123.7	0.00	6.21	1485.3	1.163	
ISL	800	4.77	34.42	27.234	90.9	0.00	4.71	1482.4	1.388	
ISL	1000	3.81	34.49	27.381	78.4	0.00	3.83	1482.3	1.544	
ISL	1300	3.24	34.29	27.532	65.8	0.00	3.15	1484.8	1.758	
ISL	1500	2.89	34.83	27.604	57.4	0.00	2.78	1486.6	1.878	

STATION 2 DATE= 23/05/83										
TIME= 2225GMT										
RAWPL 23/83										
DEPTH= 9999										
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S			
m	°C	Ppt	CL/T	ML/L	°C	°C	M/Sec	Dyn #		
088	0	21.990	35.913	24.918	302.8	0.00	21.99	1529.5	0.000	
088	76	18.520	35.821	25.773	223.9	0.00	18.53	1520.2		
088	153	15.880	35.701	26.541	170.1	0.00	15.66	1512.9		
088	200	13.400	35.331	26.544	149.7	0.00	13.37	1509.9		
088	247	12.858	35.211	26.587	150.4	0.00	12.82	1504.7		
088	409	10.210	34.837	26.772	133.4	0.00	10.28	1496.9		
088	663	8.040	34.595	26.838	122.1	0.00	7.99	1493.9		
088	910	4.880	34.478	27.275	86.8	0.00	4.81	1484.9		
088	1159	4.018	34.378	27.430	72.6	0.00	3.92	1485.3		
088	1516	3.110	34.641	27.568	59.7	0.00	3.00	1487.8		
088	1874	2.480	34.703	27.684	49.6	0.00	2.34	1491.2		
ISL	0	21.99	35.91	24.918	302.8	0.00	21.99	1529.5	0.000	
ISL	10	21.90	35.90	25.044	290.9	0.00	21.49	1527.3	.030	
ISL	25	20.78	35.88	25.228	274.0	0.00	20.77	1525.4	.072	
ISL	50	19.43	35.86	25.510	248.0	0.00	19.42	1522.9	.138	
ISL	75	18.54	35.82	25.763	226.8	0.00	18.53	1520.3	.188	
ISL	100	17.73	35.78	25.989	204.9	0.00	17.74	1518.5	.239	
ISL	150	15.81	35.71	26.343	171.7	0.00	15.79	1513.3	.347	
ISL	200	13.40	35.35	26.544	148.7	0.00	13.37	1509.9	.427	
ISL	250	12.80	35.20	26.591	150.1	0.00	12.78	1504.3	.502	
ISL	300	11.92	35.07	26.564	144.9	0.00	11.88	1502.2	.578	
ISL	400	10.43	34.85	26.783	126.1	0.00	10.38	1498.3	.717	
ISL	500	8.42	34.73	26.812	123.0	0.00	8.58	1498.9	.850	
ISL	600	6.79	34.63	26.882	127.3	0.00	6.84	1495.0	.978	
ISL	800	5.01	34.50	27.148	101.5	0.00	5.94	1487.6	1.210	
ISL	1000	4.55	34.52	27.346	82.2	0.00	4.47	1485.0	1.293	
ISL	1300	3.82	34.80	27.509	67.2	0.00	3.52	1486.3	1.618	
ISL	1500	3.14	34.84	27.583	60.2	0.00	3.03	1487.7	1.743	

STATION 3 DATE= 28/05/83										
TIME= 0222GMT										
RAWPL 23/83										
DEPTH= 4250										
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S			
m	°C	Ppt	CL/T	ML/L	°C	°C	M/Sec	Dyn #		
088	0	24.430	35.409	23.624	408.8	0.00	24.43	1533.9		
088	50	23.740	35.732	24.274	369.8	0.00	23.73	1533.5		
088	100	20.129	35.722	23.343	296.7	0.00	20.18	1529.0		
088	150	18.490	35.963	25.812	222.7	0.00	18.48	1523.4		
088	200	17.210	35.845	26.088	187.8	0.00	17.28	1518.6		
ISL	0	24.43	35.41	23.624	408.8	0.00	24.43	1533.9	0.020	
ISL	10	24.29	35.49	23.864	403.3	0.00	24.29	1533.8	.040	
ISL	25	24.09	35.80	23.872	393.7	0.00	24.08	1533.7	.099	
ISL	50	23.74	35.73	24.274	363.8	0.00	23.73	1533.5	.193	
ISL	75	21.68	35.77	24.684	308.8	0.00	21.67	1528.7	.279	
ISL	100	20.12	35.80	25.543	248.7	0.00	20.18	1523.0	.351	
ISL	150	18.49	35.96	25.812	222.7	0.00	18.48	1521.4	.473	
ISL	200	17.31	35.84	26.088	187.8	0.00	17.28	1518.6	.576	

STATION 4			23 05 104.13E		RAWPL 23/83			
DATE= 29/05/83			TIME= 0323GMT		DEPTH=		5410	
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S	Dyn #
m	°C	Ppt	CL/T	ML/L	°C	°C	M/Sec	
088	0	24.030	35.537	24.033	368.9	0.00	24.03	1533.1
088	50	22.880	35.653	24.474	346.7	0.00	22.87	1531.3
088	99	19.880	35.810	25.418	254.5	0.00	19.84	1524.3
088	150	18.030	35.632	25.896	214.4	0.00	18.02	1520.1
088	198	16.140	35.720	26.291	181.2	0.00	16.13	1515.2
088	298	13.050	35.381	26.556	155.2	0.00	13.01	1506.4
088	498	9.820	34.774	26.806	123.3	0.00	9.78	1497.8
088	698	7.298	34.514	26.996	116.2	0.00	7.22	1491.0
088	898	4.900	34.254	27.310	85.3	0.00	4.83	1484.8
088	1194	3.540	34.878	27.533	64.9	0.00	3.65	1485.9
088	1453	3.118	34.846	27.610	57.6	0.00	3.00	1487.4
ISL	0	24.03	35.53	24.033	368.9	0.00	24.03	1533.1 0.000
ISL	2	23.96	35.53	24.079	362.9	0.00	23.95	1532.7 .038
ISL	5	23.79	35.59	24.188	373.1	0.00	23.80	1532.2 .064
ISL	50	22.88	35.67	24.474	346.7	0.00	22.87	1531.3 .183
ISL	75	21.18	35.75	25.013	296.1	0.00	21.17	1527.4 .264
ISL	100	19.83	35.81	25.429	257.6	0.00	19.81	1524.3 .334
ISL	150	18.05	35.63	25.896	214.4	0.00	18.02	1520.1 .432
ISL	200	16.15	35.72	26.293	180.8	0.00	16.12	1515.1 .551
ISL	250	14.82	35.84	26.427	166.8	0.00	14.79	1511.6 .638
ISL	300	13.81	35.37	26.558	154.9	0.00	13.54	1508.3 .718
ISL	400	11.54	35.03	26.881	143.6	0.00	11.42	1502.4 .866
ISL	500	9.79	34.77	26.806	133.4	0.00	9.74	1497.9 1.007
ISL	600	8.06	34.61	26.898	125.3	0.00	8.43	1494.2 1.138
ISL	800	5.87	34.52	27.175	94.4	0.00	5.80	1487.0 1.344
ISL	1000	4.55	34.80	27.405	78.7	0.00	4.52	1484.8 1.544
ISL	1200	3.83	34.67	27.379	90.0	0.00	3.53	1486.4 1.730

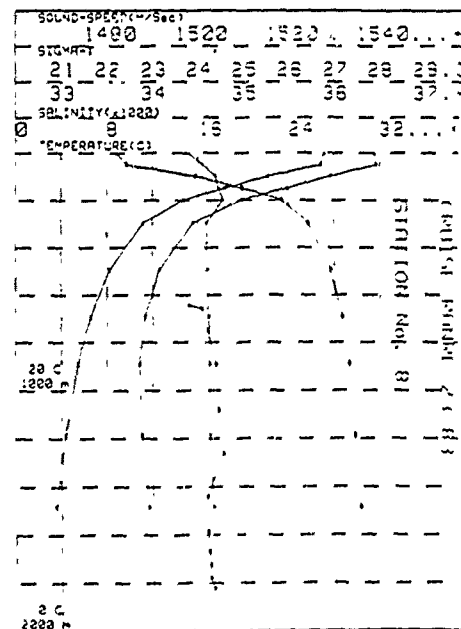
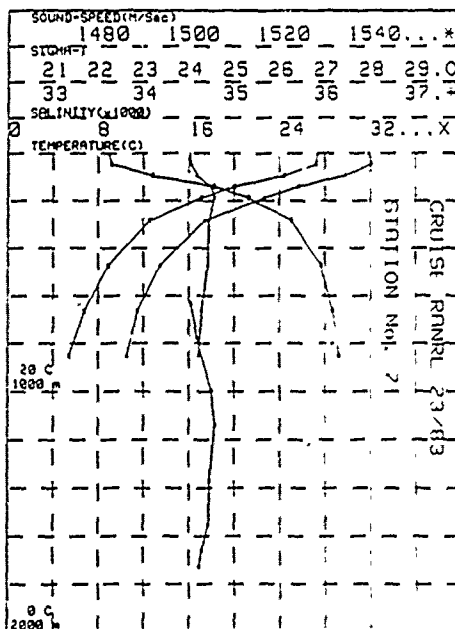
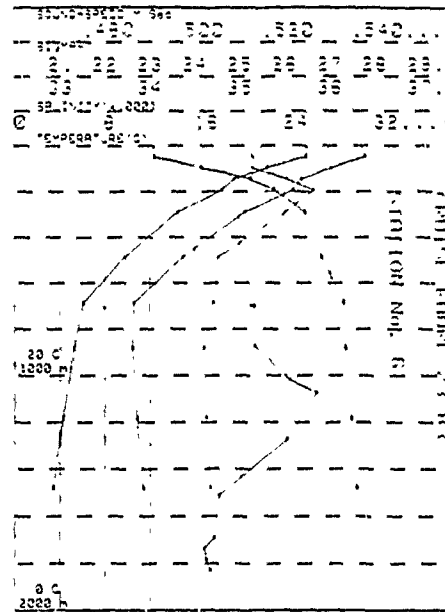
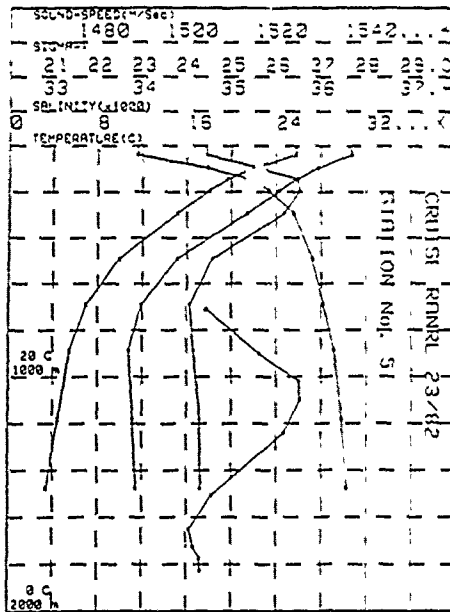


STATION 5 DATE= 30/03/83										20.225 104.35E TIME= 180000T										RAWEL 23/83 DEPTH= 4480									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S
0	23.750	34.713	22.894	495.4	0.00	25.73	1536.3	0.000	0.000	0	23.750	34.713	22.894	495.4	0.00	25.73	1536.3	0.000	0.000	0	23.750	34.713	22.894	495.4	0.00	25.73	1536.3	0.000	0.000
085	23.780	34.727	22.895	497.1	0.00	25.78	1537.0	0.000	0.000	085	23.780	34.727	22.895	497.1	0.00	25.78	1537.0	0.000	0.000	085	23.780	34.727	22.895	497.1	0.00	25.78	1537.0	0.000	0.000
086	23.950	35.332	24.470	548.8	0.00	21.83	1529.3	0.000	0.000	086	23.950	35.332	24.470	548.8	0.00	21.83	1529.3	0.000	0.000	086	23.950	35.332	24.470	548.8	0.00	21.83	1529.3	0.000	0.000
087	19.630	35.743	23.429	299.1	0.00	19.00	1524.4	0.000	0.000	087	19.630	35.743	23.429	299.1	0.00	19.00	1524.4	0.000	0.000	087	19.630	35.743	23.429	299.1	0.00	19.00	1524.4	0.000	0.000
088	19.040	35.761	23.444	220.8	0.00	18.01	1520.7	0.000	0.000	088	19.040	35.761	23.444	220.8	0.00	18.01	1520.7	0.000	0.000	088	19.040	35.761	23.444	220.8	0.00	18.01	1520.7	0.000	0.000
089	18.170	35.586	23.388	171.8	0.00	15.12	1513.3	0.000	0.000	089	18.170	35.586	23.388	171.8	0.00	15.12	1513.3	0.000	0.000	089	18.170	35.586	23.388	171.8	0.00	15.12	1513.3	0.000	0.000
090	9.910	34.785	28.800	134.1	0.00	8.88	1487.9	0.000	0.000	090	9.910	34.785	28.800	134.1	0.00	8.88	1487.9	0.000	0.000	090	9.910	34.785	28.800	134.1	0.00	8.88	1487.9	0.000	0.000
091	7.020	34.538	27.052	110.4	0.00	6.99	1480.9	0.000	0.000	091	7.020	34.538	27.052	110.4	0.00	6.99	1480.9	0.000	0.000	091	7.020	34.538	27.052	110.4	0.00	6.99	1480.9	0.000	0.000
092	5.470	34.577	27.294	86.7	0.00	5.39	1487.0	0.000	0.000	092	5.470	34.577	27.294	86.7	0.00	5.39	1487.0	0.000	0.000	092	5.470	34.577	27.294	86.7	0.00	5.39	1487.0	0.000	0.000
093	4.480	34.850	27.487	73.5	0.00	4.38	1486.0	0.000	0.000	093	4.480	34.850	27.487	73.5	0.00	4.38	1486.0	0.000	0.000	093	4.480	34.850	27.487	73.5	0.00	4.38	1486.0	0.000	0.000
094	3.470	34.858	27.568	62.7	0.00	3.38	1486.7	0.000	0.000	094	3.470	34.858	27.568	62.7	0.00	3.38	1486.7	0.000	0.000	094	3.470	34.858	27.568	62.7	0.00	3.38	1486.7	0.000	0.000

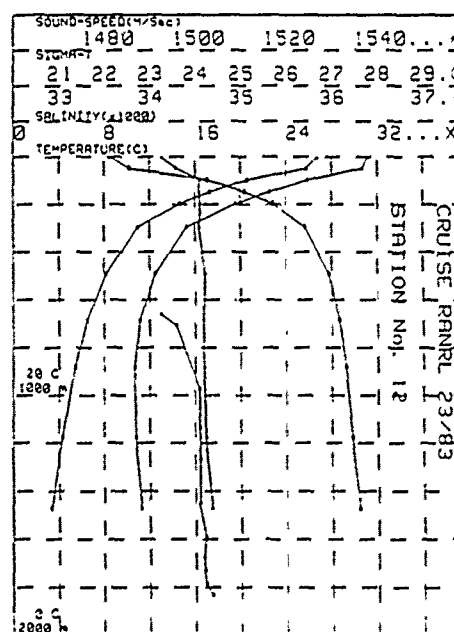
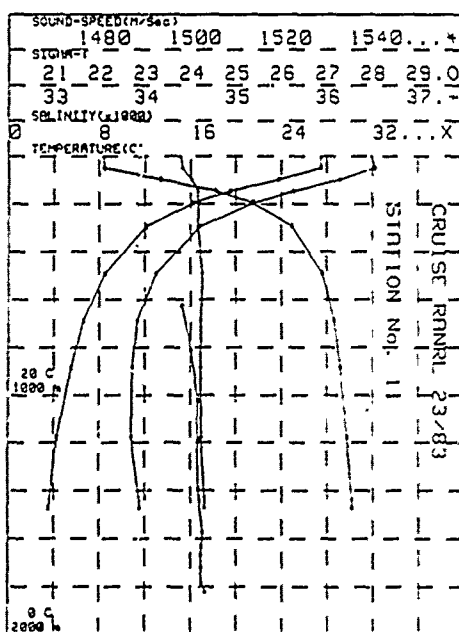
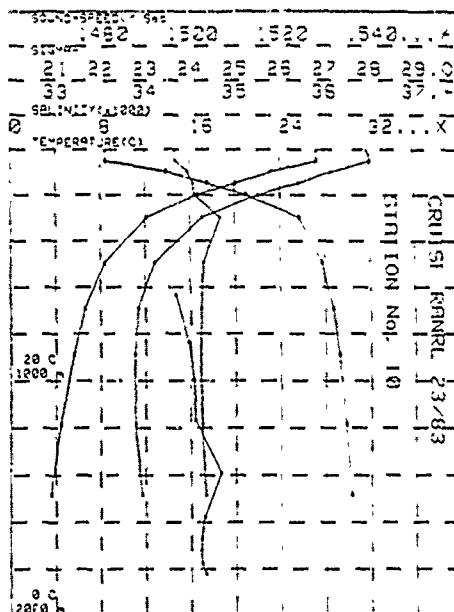
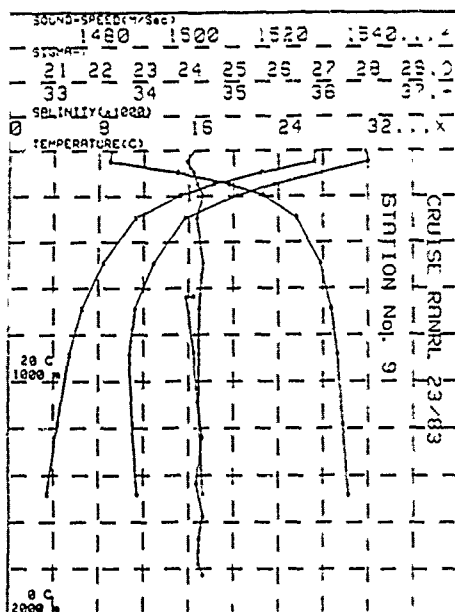
STATION 6 DATE= 01/04/83										24.025 110.47E TIME= 061000T										RAWEL 23/83 DEPTH= 2970									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S
0	26.060	35.123	23.109	475.1	0.00	26.06	1537.4	0.000	0.000	0	26.060	35.123	23.109	475.1	0.00	26.06	1537.4	0.000	0.000	0	26.060	35.123	23.109	475.1	0.00	26.06	1537.4	0.000	0.000
085	26.050	35.182	23.142	475.9	0.00	26.04	1536.2	0.000	0.000	085	26.050	35.182	23.142	475.9	0.00	26.04	1536.2	0.000	0.000	085	26.050	35.182	23.142	475.9	0.00	26.04	1536.2	0.000	0.000
086	22.638	35.188	24.180	375.8	0.00	22.51	1520.8	0.000	0.000	086	22.638	35.188	24.180	375.8	0.00	22.51	1520.8	0.000	0.000	086	22.638	35.188	24.180	375.8	0.00	22.51	1520.8	0.000	0.000
087	19.700	35.342	25.282	273.1	0.00	19.57	1524.1	0.000	0.000	087	19.700	35.342	25.282	273.1	0.00	19.57	1524.1	0.000	0.000	087	19.700	35.342	25.282	273.1	0.00	19.57	1524.1	0.000	0.000
088	16.500	35.435	25.788	226.5	0.00	16.47	1522.1	0.000	0.000	088	16.500	35.435	25.788	226.5	0.00	16.47	1522.1	0.000	0.000	088	16.500	35.435	25.788	226.5	0.00	16.47	1522.1	0.000	0.000
089	14.219	35.513	26.475	183.0	0.00	14.17	1511.2	0.000	0.000	089	14.219	35.513	26.475	183.0	0.00	14.17	1511.2	0.000	0.000	089	14.219	35.513	26.475	183.0	0.00	14.17	1511.2	0.000	0.000
090	9.779	34.797	28.802	133.7	0.00	9.71	1487.2	0.000	0.000	090	9.779	34.797	28.802	133.7	0.00	9.71	1487.2	0.000	0.000	090	9.779	34.797	28.802	133.7	0.00	9.71	1487.2	0.000	0.000
091	6.140	34.704	27.301	85.8	0.00	6.08	1486.5	0.000	0.000	091	6.140	34.704	27.301	85.8	0.00	6.08	1486.5	0.000	0.000	091	6.140	34.704	27.301	85.8	0.00	6.08	1486.5	0.000	0.000
092	5.280	34.753	27.322	84.7	0.00	5.18	1486.1	0.000	0.000	092	5.280	34.753	27.322	84.7	0.00	5.18	1486.1	0.000	0.000	092	5.280	34.753	27.322	84.7	0.00	5.18	1486.1	0.000	0.000
093	4.300	34.820	27.432	73.4	0.00	4.21	1487.2	0.000	0.000	093	4.300	34.820	27.432	73.4	0.00	4.21	1487.2	0.000	0.000	093	4.300	34.820	27.432	73.4	0.00	4.21	1487.2	0.000	0.000
094	3.430	34.864	27.578	61.7	0.00	3.32	1486.8	0.000	0.000	094	3.430	34.864	27.578	61.7	0.00	3.32	1486.8	0.000	0.000	094	3.430	34.864	27.578	61.7	0.00	3.32	1486.8	0.000	0.000

STATION 7 DATE= 07/04/83										18.47E 118.50E TIME= 153700T										RAWEL 23/83 DEPTH= 1644									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S
0	27.380	34.517	22.234	554.7	0.00	27.38	1536.7	0.000	0.000	0	27.380	34.517	22.234	554.7	0.00	27.38	1536.7	0.000	0.000	0	27.380	34.517	22.234	554.7	0.00	27.38	1536.7	0.000	0.000
085	27.220	34.528	22.294	554.9	0.00	27.21	1540.2	0.000	0.000	085	27.220	34.528	22.294	554.9	0.00	27.21	1540.2	0.000	0.000	085	27.220	34.528	22.294	554.9	0.00	27.21	1540.2	0.000	0.000
086	24.618	34.950	23.211	486.0	0.00	24.29	1534.5	0.000	0.000	086	24.618	34.950	23.211	486.0	0.00	24.29	1534.5	0.000	0.000	086	24.618	34.950	23.211	486.0	0.00	24.29	1534.5	0.000	0.000
087	20.018	34.748	24.238	340.7	0.00	19.86	1524.2	0.000	0.000	087	20.018	34.748	24.238	340.7	0.00	19.86	1524.2	0.000	0.000	087	20.018	34.748	24.238	340.7	0.00	19.86	1524.2	0.000	0.000
088	17.110	34.780	25.327	288.6	0.00	17.08	1518.7	0.000	0.000	088	17.110	34.780	25.327	288.6	0.00	17.08	1518.7	0.000	0.000	088	17.110	34.780	25.327	288.6	0.00	17.08	1518.7	0.000	0.000
089	12.580	34.728	26.270	181.2	0.00	12.52	1503.7	0.000	0.000	089	12.580	34.728	26.270	181.2	0.00	12.52	1503.7	0.000	0.000	089	12.580	34.728	26.270	181.2	0.00	12.52	1503.7	0.000	0.000
090	8.870	34.714	26.913	121.9	0.00	8.82	1483.8	0.000	0.000	090	8.870	34.714	26.913	121.9	0.00	8.82	1483.8	0.000	0.000	090	8.870	34.714	26.913	121.9	0.00	8.82	1483.8	0.000	0.000
091	6.780	34.644	27.188	86.8	0.00	6.72	1486.7	0.000	0.000	091	6.780	34.644	27.188	86.8	0.00	6.72	1486.7	0.000	0.000	091	6.780	34.644	27.188	86.8	0.00	6.72	1486.7	0.000	0.000
092	5.410	34.617	27.318	65.1	0.00	5.34	1484.3	0.000	0.000	092	5.410	34.617	27.318	65.1	0.00	5.34	1484.3	0.000	0.000	092	5.410	34.617	27.318	65.1	0.00	5.34	1484.3	0.000	0.000

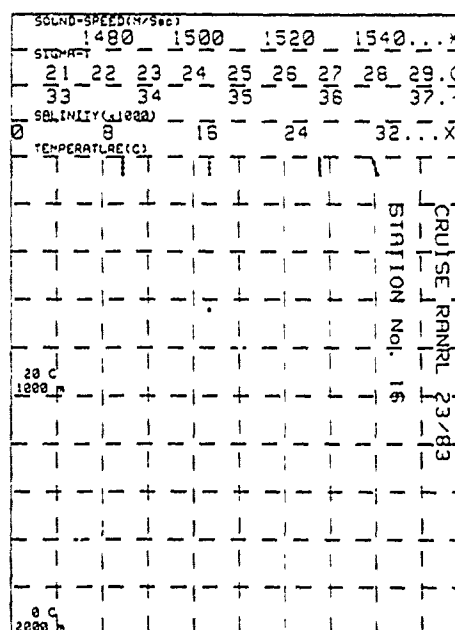
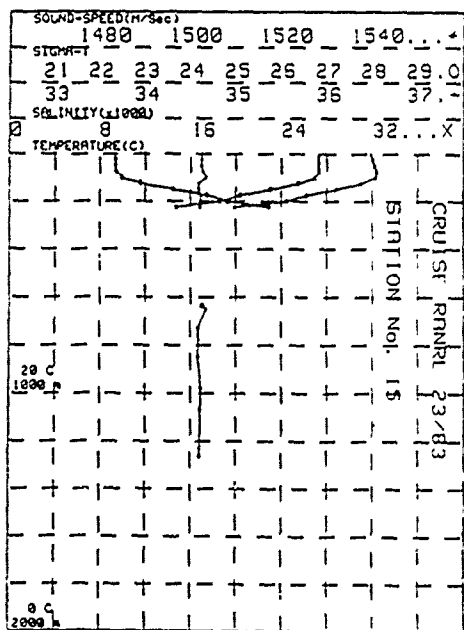
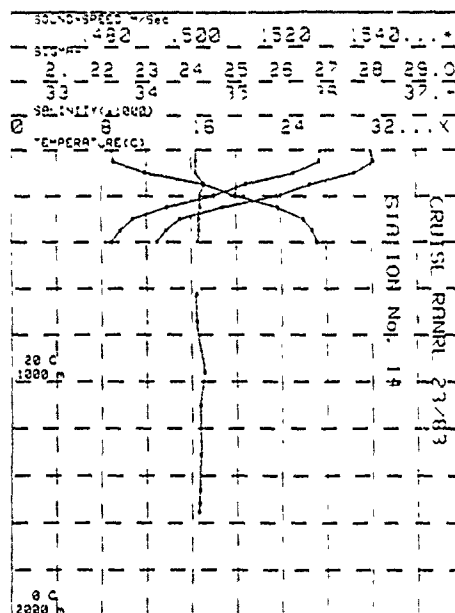
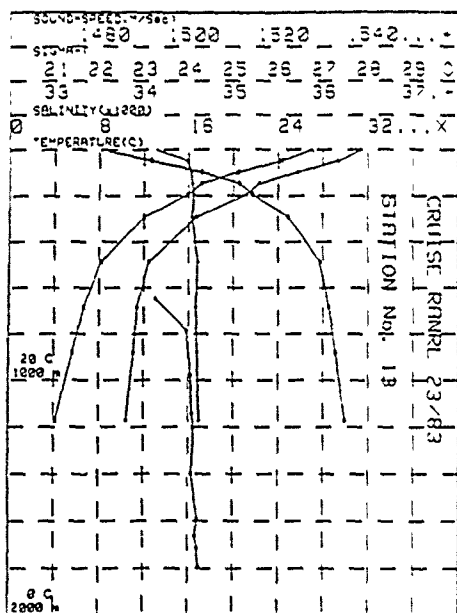
STATION 8										19 23E 117.53E										RAWEL 23/83										
DATE= 04/04/83										TIME= 044900T										DEPTH= 5685										
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	
085	9	27.130	34.405	22.230	556.1	0.00	27.13	1536.0	0.000	085	9	27.130	34.405	22.230	556.1	0.00	27.13	1536.0	0.000	0.000	085	9	27.130	34.405	22.230	556.1	0.00	27.13	1536.0	0.000
085	50	26.780	34.545	22.444	540.7	0.00	26.78	1529.2	0.000	085	50	26.780	34.545	22.444	540.7	0.00	26.78	1529.2	0.000	0.000	085	50	26.780	34.545	22.444	540.7	0.00	26.78	1529.2	0.000
085	99	22.140	34.907	23.950	268.4	0.00	22.12	1529.1	0.000	085	99	22.140	34.907	23.950	268.4	0.00	22.12	1529.1	0.000	0.000	085	99	22.140	34.907	23.950	268.4	0.00	22.12	1529.1	0.000
085	148	14.270	34.725	24.871	112.4	0.00	14.26	1534.7	0.000	085	148	14.270	34.725	24.871	112.4	0.00	14.26	1534.7	0.000	0.000	085	148	14.270	34.725	24.871	112.4	0.00	14.26	1534.7	0.000
085	190	11.150	34.779	25.157	51.9	0.00	11.14	1509.6	0.000	085	190	11.150	34.779	25.157	51.9	0.00	11.14	1509.6	0.000	0.000	085	190	11.150	34.779	25.157	51.9	0.00	11.14	1509.6	0.000
085	297	11.180	34.583	26.420	186.0	0.00	11.14	1499.0	0.000	085	297	11.180	34.583	26.420	186.0	0.00	11.14	1499.0	0.000	0.000	085	297	11.180	34.583	26.420	186.0	0.00	11.14	1499.0	0.000
085	495	8.290	34.617	26.822	121.3	0.00	8 21	1491.5	0.000	085	495	8.290	34.617	26.822	121.3	0.00	8 21	1491.5	0.000	0.000	085	495	8.290	34.617	26.822	121.3	0.00	8 21	1491.5	0.000
085	682	4.800	34.815	27.170	96.8	0.00	6.53	1488.4	0.000	085	682	4.800	34.815	27.170	96.8	0.00	6.53	1488.4	0.000	0.000	085	682	4.800	34.815	27.170	96.8	0.00	6.53	1488.4	0.000
085	870	4.420	34.924	27.322	81.2	0.00	4.42	1485.2	0.000	085	870	4.420	34.924	27.322	81.2	0.00	4.42	1485.2	0.000	0.000	085	870	4.420	34.924	27.322	81.2	0.00	4.42	1485.2	0.000
085	1184	4.000	34.817	27.449	74.5	0.00	4.28	1487.0	0.000	085	1184	4.000	34.817	27.449	74.5	0.00	4.28	1487.0	0.000	0.000	085	1184	4.000	34.817	27.449	74.5	0.00	4.28	1487.0	0.000
085	1485	3.546	34.647	27.548	62.9	0.00	3.43	1488.1	0.000	085	1485	3.546	34.647	27.548	62.9	0.00	3.43	1488.1	0.000	0.000	085	1485	3.546	34.647	27.548	62.9	0.00	3.43	1488.1	0.000
154	0	27.13	34.41	22.830	556.1	0.00	27.13	1536.0	0.000	154	0	27.13	34.41	22.830	556.1	0.00	27.13	1536.0	0.000	0.000	154	0	27.13	34.41	22.830	556.1	0.00	27.13	1536.0	0.000
154	10	27.04	34.41	22.873	545.4	0.08	27 04	1536.1	0.090	154	10	27.04	34.41	22.873	545.4	0.08	27 04	1536.1	0.090	0.090	154	10	27.04	34.41	22.873	545.4	0.08	27 04	1536.1	0.090
154	29	26.96	34.47	22.337	559.9	0.00	26.99	1529.2	0.100	154	29	26.96	34.47	22.337	559.9	0.00	26.99	1529.2	0.100	0.100	154	29	26.96	34.47	22.337	559.9	0.00	26.99	1529.2	0.100
154	56	25.79	34.55	22.444	540.7	0.00	26.78	1536.3	0.270	154	56	25.79	34.55	22.444	540.7	0.00	26.78	1536.3	0.270	0.270	154	56	25.79	34.55	22.444	540.7	0.00	26.78	1536.3	0.270
154	75	24.74	34.64	23.273	466.3	0.00	24.70	1534.0	0.401	154	75	24.74	34.64	23.273	466.3	0.00	24.70	1534.0	0.401	0.401	154	75	24.74	34.64	23.273	466.3	0.00	24.70	1534.0	0.401
154	100	22.72	34.875	24.823	302.3	0.00	22.70	1534.0	0.401	154	100	22.72	34.875	24.823	302.3	0.00	22.70	1534.0	0.401	0.401	154	100	22.72	34.875	24.823	302.3	0.00	22.70	1534.0	0.401
154	150	18.26	34.73	25.014	298.3	0.00	18.18	1519.2	0.811	154	150	18.26	34.73	25.014	298.3	0.00	18.18	1519.2	0.811	0.811	154	150	18.26	34.73	25.014	298.3	0.00	18.18	1519.2	0.811
154	200	16.49	34.77	25.871	217.7	0.00	16.43	1508.3	0.811	154	200	16.49	34.77	25.871	217.7	0.00	16.43	1508.3	0.811	0.811	154	200	16.49	34.77	25.871	217.7	0.00	16.43	1508.3	0.811
154	250	12.70	34.47	24.183	186.6	0.00	12.67	1504.4	0.811	154	250	12.70	34.47	24.183	186.6	0.00	12.67	1504.4	0.811	0.811	154	250	12.70	34.47	24.183	186.6	0.00	12.67	1504.4	0.811
154	300	11.13	34.58	25.436	140.8	0.00	11.06	1503.0	0.811	154	300	11.13	34.58	25.436	140.8	0.00	11.06	1503.0	0.811	0.811	154	300	11.13	34.58	25.436	140.8	0.00	11.06	1503.0	0.811
154	350	9.30	34.60	26.715	136.8	0.00	9.46	1494.6	0.137	154	350	9.30	34.60	26.715	136.8	0.00	9.46	1494.6	0.137	0.137	154	350	9.30	34.60	26.715	136.8	0.00	9.46	1494.6	0.137
154	400	8.21	34.60	26.829	120.4	0.00	8.16	1491.4	0.108	154	400	8.21	34.60	26.829	120.4	0.00	8.16	1491.4	0.108	0.108	154	400	8.21	34.60	26.829	120.4	0.00	8.16	1491.4	0.108
154	500	7.31	34.61	27 090	104.2	0.00	7.25	1488.6	0.108	154	500	7.31	34.61	27 090	104.2	0.00	7.25	1488.6	0.108	0.108	154	500	7.31	34.61	27 090	104.2	0.00	7.25	1488.6	0.108
154	600	5.95	34.62	27 299	90.9	0.00	5.88	1485.7	0.801	154	600	5.95	34.62	27 299	90.9	0.00	5.88	1485.7	0.801	0.801	154	600	5.95	34.62	27 299	90.9	0.00	5.88	1485.7	0.801
154	700	5.13	34.63	27 309	81.3	0.00	5.06	1482.7	1.772	154	700	5.13	34.63	27 309	81.3	0.00	5.06	1482.7	1.772	1.772	154	700	5.13	34.63	27 309	81.3	0.00	5.06	1482.7	1.772
154	800	4.93	34.64	27 293	95.8	0.00	3.83	1484.2	1.990	154	800	4.93	34.64	27 293	95.8	0.00	3.83	1484.2	1.990	1.990	154	800	4.93	34.64	27 293	95.8	0.00	3.83	1484.2	1.990



STATION 10		13.586	110.436	RASTER 23/83			
DATE= 9/06/83		TIME= 1733Z07		DEPTH=	5486		
DEPTH	TEMP	SALINITY	SI004-T	A.S.V.	CL	POT./TEMP	9.8
	°C	Pctg		CL/T	M/L	°C	M/Sec
0	27.320	34.336	22.114	570.2	0.00	27.33	1539.4
50	27.310	34.330	22.123	571.4	0.00	27.30	1540.2
100	27.300	34.078	22.133	564.8	0.00	27.28	1541.2
150	20.000	34.537	24.304	337.6	0.00	20.03	1524.2
180	19.840	34.545	25.253	278.8	0.00	19.81	1531.2
200	20.000	34.545	26.202	219.8	0.00	20.00	1532.2
250	20.000	34.545	26.202	219.8	0.00	20.00	1532.2
300	6.300	34.617	26.836	119.7	0.00	6.34	1482.1
350	6.600	34.610	27.173	96.5	0.00	6.33	1480.4
400	5.960	34.609	27.565	86.0	0.00	5.31	1487.0
450	6.410	34.618	27.565	74.8	0.00	6.41	1487.0
500	6.310	34.617	27.565	63.3	0.20	6.48	1486.2
550							
600							
650							
700							
750							
800							
850							
900							
950							
1000							
1050							
1100							
1150							
1200							
1250							
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2000							
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2100							
2150							
2200							
2250							
2300							
2350							
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2500							
2550							
2600							
2650							
2700							
2750							
2800							
2850							
2900							
2950							
3000							
3050							
3100							



STATION 14		13.406		125.154		Pneum. 23/83		DEPTH 462	
DATE 14/06/83		TIME = 064507							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V.	CL.F.T	OX	POT.	PH	S.S.
CM	°C	Prom	kg/m ³	g/cm ³	ML	g/cm ³	°C	g/cm ³	g/cm ³
000	0 27.400	34.155	22.231	1591.9	0.00	27.40	1540.0		
005	50 27.370	34.152	22.264	1597.0	0.00	27.40	1540.6		
010	100 26.120	34.152	22.264	1602.4	0.00	27.10	1536.3		
015	150 26.040	34.141	22.278	1606.7	0.00	26.20	1538.3		
020	200 17.950	34.194	24.974	1623.6	0.00	17.82	1511.1		
025	250 13.750	34.190	25.829	1712.1	0.00	13.71	1507.0		
030	300 10.750	34.166	26.496	1716.1	0.00	10.71	1497.5		
035	350 9.060	34.166	26.608	1715.5	0.00	9.00	1491.0		
040	400 8.910	34.175	26.808	1714.5	0.00	8.87	1482.4		
13L	0 27.46	34.16	22.233	1596.1	0.00	27.48	1540.0	0.0000	
13L	50 27.40	34.17	22.267	1598.0	0.00	27.42	1540.1	0.0000	
13L	23 27.42	34.18	22.277	1596.3	0.00	27.42	1540.3	1.4000	
13L	50 27.37	34.15	22.264	1597.0	0.00	27.38	1540.6	1.2718	
13L	75 26.21	34.15	22.264	1602.4	0.00	26.48	1539.1	1.4175	
13L	100 26.12	34.15	22.268	1606.4	0.00	26.13	1534.8	1.4000	
13L	150 26.79	34.17	24.972	1606.7	0.00	26.18	1511.1	1.1111	
13L	200 17.96	34.19	24.974	1623.6	0.00	17.82	1511.1	1.0000	
13L	250 13.75	34.00	25.829	1712.1	0.00	13.71	1507.0	1.0500	
13L	300 10.75	34.16	26.496	1716.1	0.00	10.71	1497.5	1.1111	
13L	400 8.91	34.17	26.808	1714.5	0.00	8.87	1482.4	1.1111	



STATION 17									
DATE= 14/06/83									
TIME= 233000H									
RANRL 23/83									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OK	POT.TEMP	S.S	DYN. #	
"	°C	PSS	CL/T	ML/L	°C	°C	R/Sø		
0	27.340	34.750	22.423	540.7	0.00	27.34	1536.9		
005	10	27.340	34.747	22.414	541.0	0.00	27.34	1540.1	
005	20	27.320	34.751	22.427	541.1	0.00	27.33	1540.2	
005	30	27.320	34.748	22.426	541.0	0.00	27.31	1540.3	
005	40	27.320	34.745	22.422	542.4	0.00	27.32	1540.3	
005	50	27.340	34.753	22.428	542.5	0.00	27.33	1540.7	
ISL	0	27.34	34.75	22.423	540.7	0.00	27.34	1536.9	0.000
ISL	10	27.34	34.75	22.414	541.0	0.00	27.34	1540.1	.054
ISL	20	27.32	34.75	22.426	541.3	0.00	27.32	1540.2	.135
ISL	30	27.34	34.75	22.428	542.5	0.00	27.33	1540.7	.271

STATION 18									
DATE= 15/06/83									
TIME= 041000H									
RANRL 23/83									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OK	POT.TEMP	S.S	DYN. #	
"	°C	PSS	CL/T	ML/L	°C	°C	R/Sø		
0	26.430	34.513	22.553	530.1	0.00	26.43	1537.6		
005	10	26.370	34.511	22.551	529.8	0.00	26.37	1537.6	
005	20	26.310	34.510	22.579	529.8	0.00	26.31	1537.7	
005	30	26.230	34.574	22.642	520.9	0.00	26.22	1537.7	
ISL	0	26.43	34.51	22.553	530.1	0.00	26.43	1537.6	0.000
ISL	10	26.37	34.51	22.551	529.8	0.00	26.37	1537.6	.053
ISL	20	26.27	34.54	22.603	524.4	0.00	26.27	1537.7	.132

SOUND-SPEED (m/sec)									
1480 1500 1520 1540 ...									
STATION									
21	22	23	24	25	26	27	28	29	0
33	34	35	36	37	38	39	40	41	+
SALINITY (J882)									
8	16	24	32	40	48	56	64	72	X
TEMPERATURE (C)									
1	2	3	4	5	6	7	8	9	+
10	11	12	13	14	15	16	17	18	+
19	20	21	22	23	24	25	26	27	+
28	29	30	31	32	33	34	35	36	+
37	38	39	40	41	42	43	44	45	+
46	47	48	49	50	51	52	53	54	+
55	56	57	58	59	60	61	62	63	+
64	65	66	67	68	69	70	71	72	+
73	74	75	76	77	78	79	80	81	+
82	83	84	85	86	87	88	89	90	+
91	92	93	94	95	96	97	98	99	+
100	101	102	103	104	105	106	107	108	+
109	110	111	112	113	114	115	116	117	+
118	119	120	121	122	123	124	125	126	+
127	128	129	130	131	132	133	134	135	+
136	137	138	139	140	141	142	143	144	+
145	146	147	148	149	150	151	152	153	+
154	155	156	157	158	159	160	161	162	+
163	164	165	166	167	168	169	170	171	+
172	173	174	175	176	177	178	179	180	+
181	182	183	184	185	186	187	188	189	+
190	191	192	193	194	195	196	197	198	+
199	200	201	202	203	204	205	206	207	+
208	209	210	211	212	213	214	215	216	+
217	218	219	220	221	222	223	224	225	+
226	227	228	229	230	231	232	233	234	+
235	236	237	238	239	240	241	242	243	+
244	245	246	247	248	249	250	251	252	+
253	254	255	256	257	258	259	260	261	+
262	263	264	265	266	267	268	269	270	+
271	272	273	274	275	276	277	278	279	+
280	281	282	283	284	285	286	287	288	+
289	290	291	292	293	294	295	296	297	+
298	299	300	301	302	303	304	305	306	+
307	308	309	310	311	312	313	314	315	+
316	317	318	319	320	321	322	323	324	+
325	326	327	328	329	330	331	332	333	+
334	335	336	337	338	339	340	341	342	+
343	344	345	346	347	348	349	350	351	+
352	353	354	355	356	357	358	359	360	+
361	362	363	364	365	366	367	368	369	+
370	371	372	373	374	375	376	377	378	+
379	380	381	382	383	384	385	386	387	+
388	389	390	391	392	393	394	395	396	+
397	398	399	400	401	402	403	404	405	+
406	407	408	409	410	411	412	413	414	+
415	416	417	418	419	420	421	422	423	+
424	425	426	427	428	429	430	431	432	+
433	434	435	436	437	438	439	440	441	+
442	443	444	445	446	447	448	449	450	+
451	452	453	454	455	456	457	458	459	+
460	461	462	463	464	465	466	467	468	+
469	470	471	472	473	474	475	476	477	+
478	479	480	481	482	483	484	485	486	+
487	488	489	490	491	492	493	494	495	+
496	497	498	499	500	501	502	503	504	+
505	506	507	508	509	510	511	512	513	+
514	515	516	517	518	519	520	521	522	+
523	524	525	526	527	528	529	530	531	+
532	533	534	535	536	537	538	539	540	+
541	542	543	544	545	546	547	548	549	+
550	551	552	553	554	555	556	557	558	+
559	560	561	562	563	564	565	566	567	+
568	569	570	571	572	573	574	575	576	+
577	578	579	580	581	582	583	584	585	+
586	587	588	589	590	591	592	593	594	+
595	596	597	598	599	600	601	602	603	+
604	605	606	607	608	609	610	611	612	+
613	614	615	616	617	618	619	620	621	+
622	623	624	625	626	627	628	629	630	+
631	632	633	634	635	636	637	638	639	+
640	641	642	643	644	645	646	647	648	+
649	650	651	652	653	654	655	656	657	+
658	659	660	661	662	663	664	665	666	+
667	668	669	670	671	672	673	674	675	+
676	677	678	679	680	681	682	683	684	+
685	686	687	688	689	690	691	692	693	+
694	695	696	697	698	699	700	701	702	+
703	704	705	706	707	708	709	710	711	+
712	713	714	715	716	717	718	719	720	+
721	722	723	724	725	726	727	728	729	+
730	731	732	733	734	735	736	737	738	+
739	740	741	742	743	744	745	746	747	+
748	749	750	751	752	753	754	755	756	+
757	758	759	760	761	762	763	764	765	+
766	767	768	769	770	771	772	773	774	+
775	776	777	778	779	780	781	782	783	+
784	785	786	787	788	789	790	791	792	+
793	794	795	796	797	798	799	800	801	+
802	803	804	805	806	807	808	809	810	+
811	812	813	814	815	816	817	818	819	+
820	821	822	823	824	825	826	827	828	+
829	830	831	832	833	834	835	836	837	+
838	839	840	841	842	843	844	845	846	+
847	848	849	850	851	852	853	854	855	+
856	857	858	859	860	861	862	863	864	+
865	866	867	868	869	870	871	872	873	+
874	875	876	877	878	879	880	881	882	+
883	884	885	886	887	888	889	890	891	+
892	893	894	895	896	897	898	899	900	+
901	902	903	904	905	906	907	908	909	+
910	911	912	913	914	915	916	917	918	+
919	920	921	922	923	924	925	926	927	+
928	929	930	931	932	933	934	935	936	+
937	938	939	940	941	942	943	944	945	+

Cruise RANRL TC 1

Notes for cruise TC 1

Salinity determinations - Salinities for stations 1 to 5 were determined with a 1970 Charlottenlund salinity standard (quoted ratio of 1.00005, batch P 53, salinity 35.002, CI = 19.375, 2 to 5 March 1970).

The quoted ratio was found to be incorrect when batch P 62 (27 May 1973, CI = 19.3775, Charlottenlund) gave a different value for the substandard during salinity analysis of stations 6 to 8. Salinities for stations 9 to 12 were analysed at CSIRO with fresher batches (P 91) after the cruise.

Batch P 62 was measured for conductivity ratio against various fresh batches (including P 91; P 99 27 July 1984) over the next few years, and was found to be good.

Batch P 53 was measured against batches P 62 and P 99 over the next few years and a new value determined for the conductivity ratio of 0.99972, and not 1.00005. Batch P 53 showed no inconsistencies, but phials appeared to be leached. The conductivity ratios taken using P 53 for stations 1 to 5 were adjusted by multiplying by (1.00005/0.99972) and the salinities recalculated. (This increases the value found using P 53 by about 0.013 PSU). The incorrect ratio given may have been caused by the values being offset in the vertical on the paperwork supplied with batch P 53.

Other sources of data for cruise TC 1

See other sources of data for cruise TC 2.

Additional Nansen data for cruise TC 1

Depth (m)	T	S	O ₂	
2435	1.99	-	-	Station 1
2922	1.586	-	-	
3409	1.260	-	-	
2430	-	34.715	4.18	Station 4
3406	1.298	-	4.41	
2442	-	34.717	4.11	Station 5
697	7.26	-	4.28	Station 6
4556	1.167	-	4.50	Station 8
2370	2.02	-	4.08	Station 9
2773	1.70	-	4.23	
4539	1.145	34.724(?)	4.44	Station 11
689	7.46	-	-	Station 12
1086	4.72	-	3.99	
3954	1.172	-	4.29	

Occasional mismatches are seen in the profiles for TC 1 and TC 2 eg in station 6 at 1086 and 1095 m. A bottle was usually placed at nominal depth of 1200 m on both shallow and deep casts. The top bottle on the deep cast occasionally came to be higher than the bottom bottle on the shallow cast, and values do not always match exactly, presumably because of ship drift. Both sets of values have been included in the tables, although only one is necessary for most calculations.

Nansen station positions for cruise TC 1.

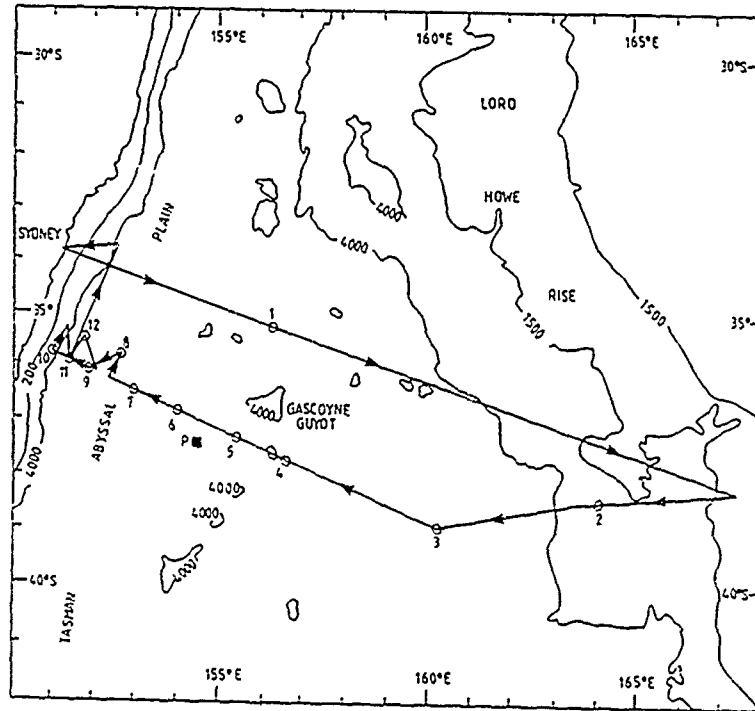


Figure 6. Track chart of cruise TC 1 (hydrostations are numbered)

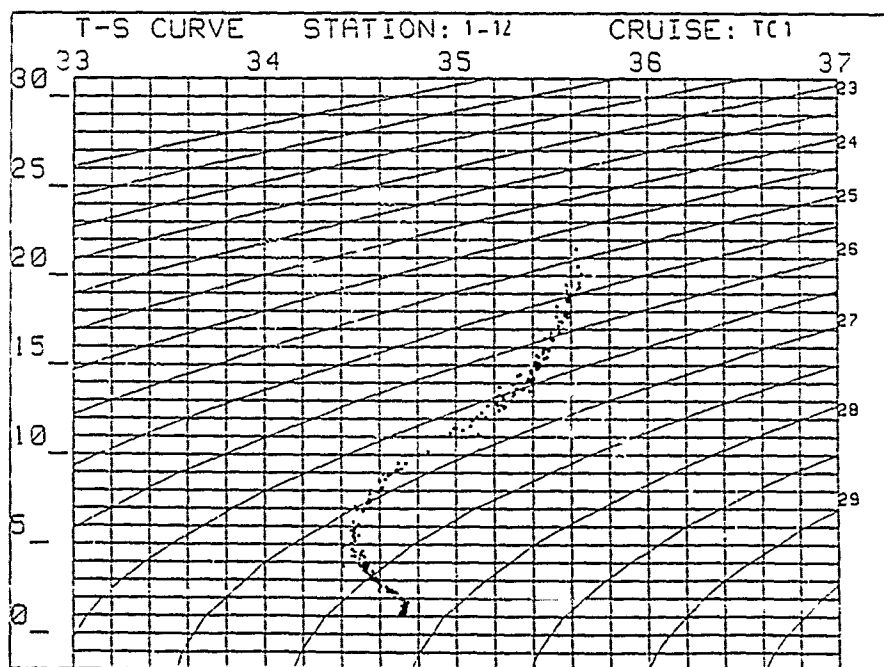
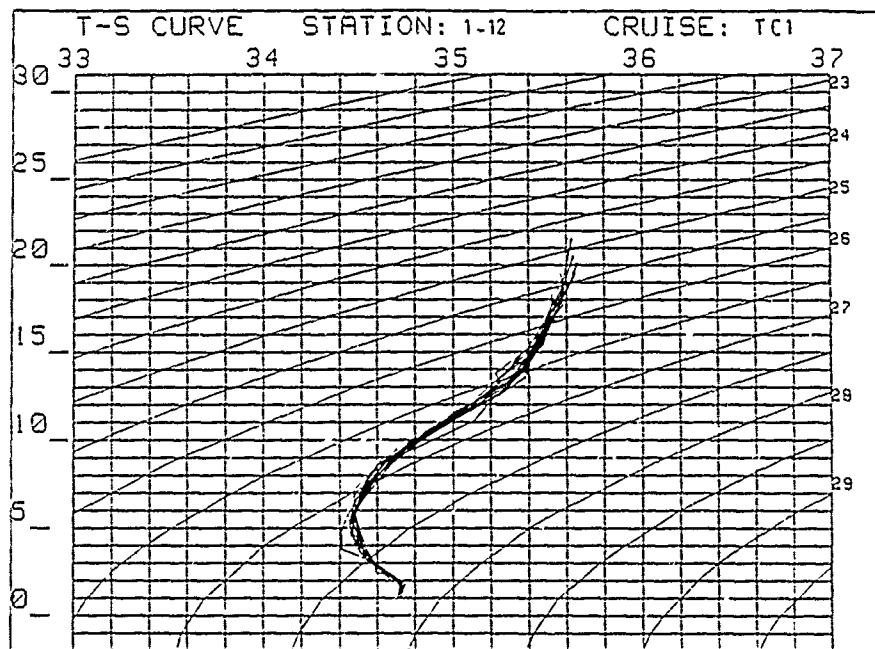


Figure 7. Temperature-salinity curves and scatter plot for cruise TC 1

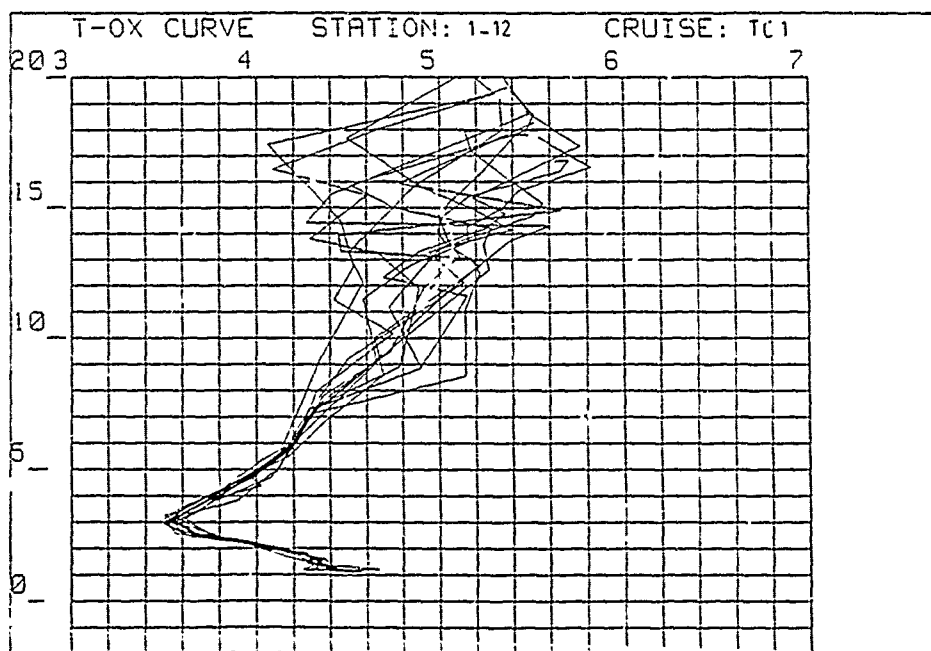
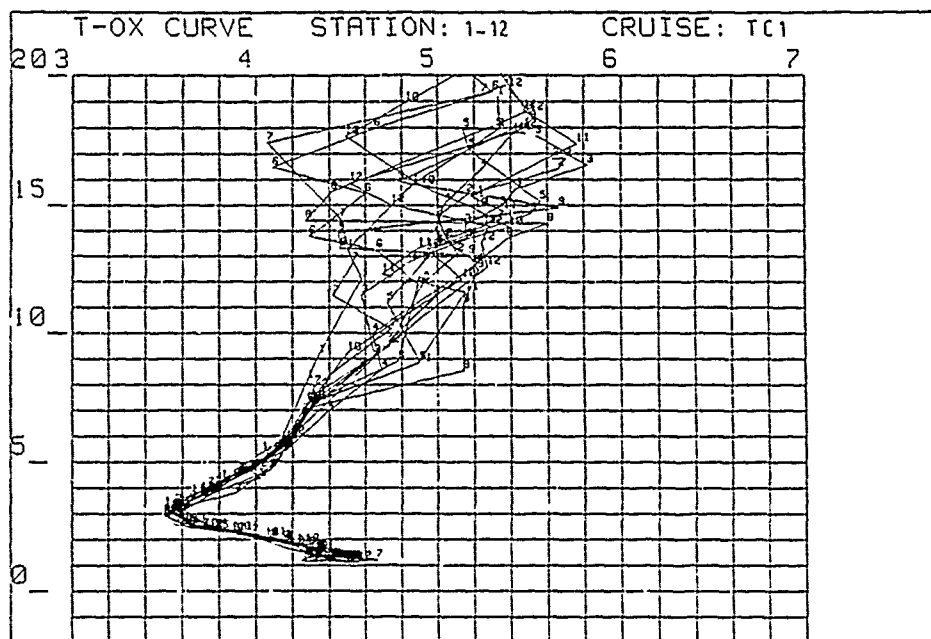
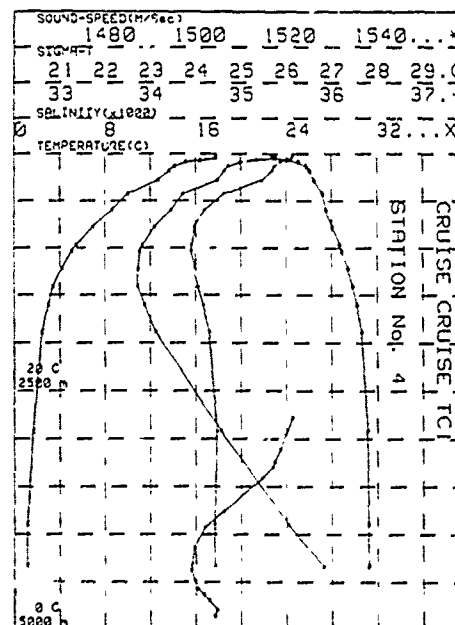
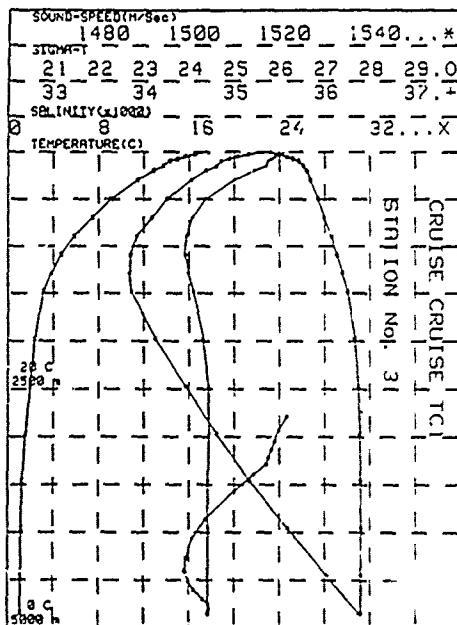
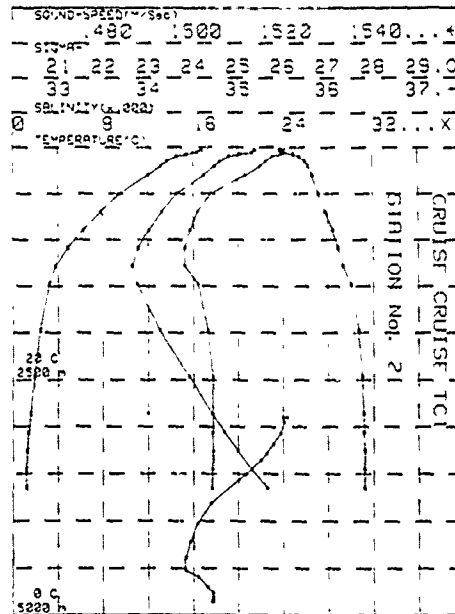
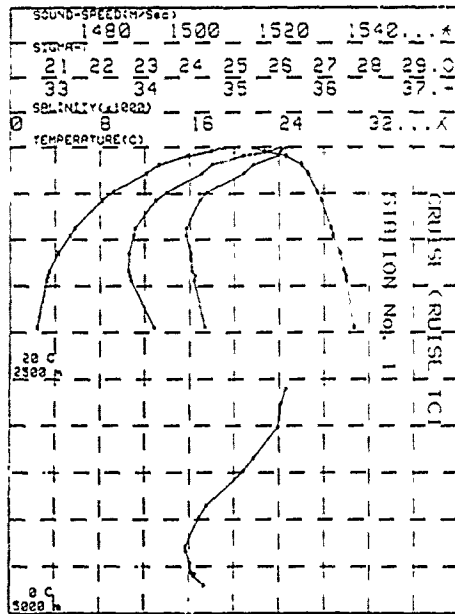


Figure 8. Temperature-oxygen curves for cruise TC 1

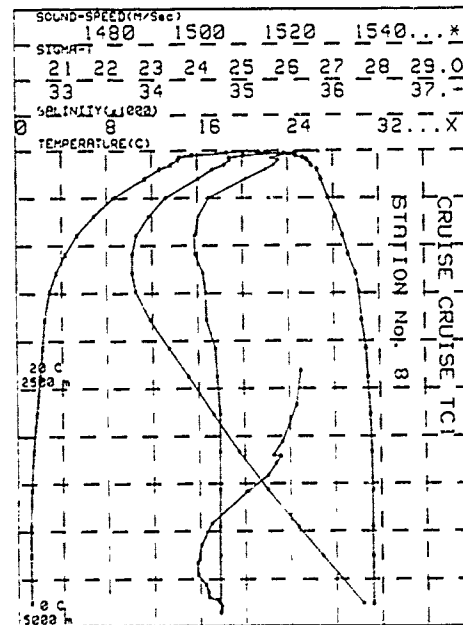
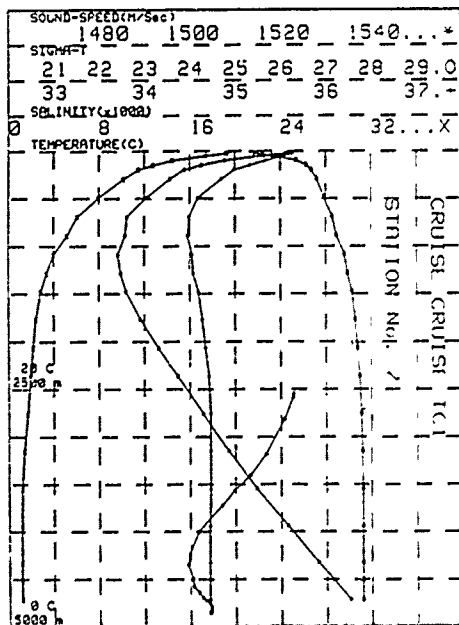
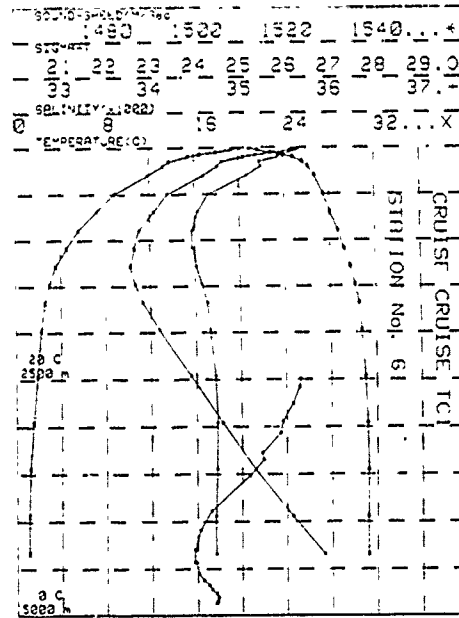
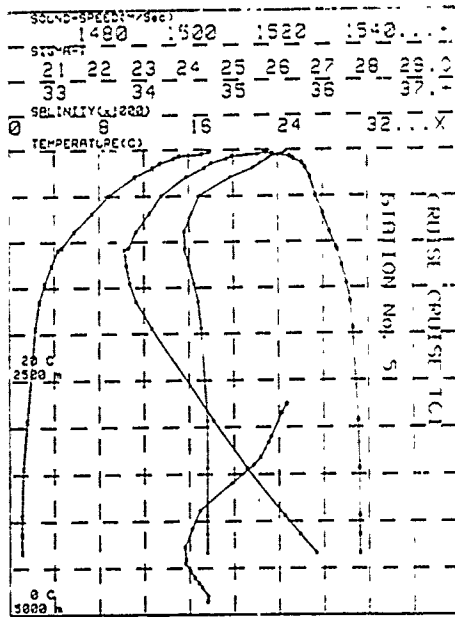
ISA	0	18 81	35,54	25,973	202,2	5,43	10,81	513,0	0,000
ISA	10	18,00	35,51	25,947	203,1	5,47	10,90	513,0	0,000
ISA	25	18,78	35,48	25,944	205,8	5,70	10,78	513,0	0,051
ISA	50	18,51	35,51	25,943	205,8	5,40	10,78	513,0	0,051
ISA	75	15,43	35,47	26,241	179,1	5,18	14,52	510,0	0,148
ISA	100	15,55	35,39	26 371	147,4	5 00	14,54	510,1	1,192
ISA	150	13,98	35,31	26,495	158,9	5,05	13,67	510,0	1,250
ISA	200	13,12	35,25	26,581	151,7	5,11	13,59	510,0	1,273
ISA	250	12,22	35,18	26,611	141,1	5,03	13,51	510,0	1,288
ISA	300	11,96	35,08	26,657	144,8	4,82	13,82	510,2	0,946
ISA	400	10,54	34,86	26,729	129,4	4,85	11,90	510,0	0,640
ISA	500	9,50	34,70	26,801	123,7	4,73	9,44	1496 4	1,707
ISA	600	8,62	34,61	26,878	127,7	4,52	9,58	1494,7	1,677
ISA	700	8,00	34,50	26,930	118,0	4,37	8,99	1494,8	1,640
ISA	1000	5,48	34,44	27,130	99,7	4,15	5,37	1486,7	1,340
ISA	1300	3,74	34,43	27,355	81,0	3,85	3,64	1486 6	1,664
ISA	1500	3,17	34,56	27,158	66,5	3,58	3,00	1487,7	1,748
ISA	2000	2,30	34,47	27,476	51,3	3,81	2,21	1492,6	2,082
ISA	2500	1,90	34,72	27,758	43,5	4,17	1,72	1494,8	2,040
ISA	3000	1,44	34,72	28,070	37,0	4,12	1,22	1500,0	2,040
ISA	3500	1,19	34,72	27,905	37,1	4,44	1,33	1513,0	2,713

15L	0	17.00	35.57	25.58	222.8	5.48	17.00	1318.6	0.000
15L	10	17.40	35.57	25.741	222.7	5.48	17.00	1318.6	0.000
15L	20	17.80	35.57	25.748	222.5	5.44	17.20	1317.0	0.000
15L	50	17.40	35.55	25.840	218.5	5.37	17.39	1318.2	0.131
15L	75	15.81	35.47	26.151	187.7	5.14	15.80	1311.7	0.161
15L	100	14.78	35.47	26.340	170.3	5.02	14.75	1308.8	0.000
15L	150	13.90	35.38	26.487	157.7	5.00	13.98	1309.8	0.288
15L	200	13.31	35.33	26.550	150.0	5.12	13.48	1304.3	0.348
15L	250	13.09	35.28	26.598	143.7	5.22	13.05	1305.8	0.461
15L	300	12.28	35.18	26.658	144.7	5.11	12.24	1303.1	0.511
15L	350	10.39	34.97	26.824	14.70	5.44	10.34	1294.4	0.544
15L	500	9.98	34.71	26.923	131.6	4.68	9.98	1294.1	0.781
15L	800	8.37	34.40	27.062	128.0	4.69	8.51	1294.4	0.914
15L	800	6.75	34.48	26.824	112.4	4.38	6.67	1290.6	1.154
15L	1000	5.27	34.48	27.312	96.4	4.98	5.18	1287.9	1.344
15L	1200	3.61	34.47	27.410	79.7	5.72	3.68	1287.9	1.774
15L	1500	3.21	34.58	27.531	67.1	5.38	3.20	1287.9	2.000
15L	2000	2.34	34.47	27.478	51.1	3.89	2.19	1293.7	2.306
15L	2500	1.93	34.71	27.748	44.8	4.0	1.75	1299.6	2.600
15L	3000	1.33	34.61	27.800	40.6	4.1	1.38	1299.6	2.731
15L	3500	1.27	34.71	27.783	36.3	4.34	1.01	1314.1	2.731
15L	4000	1.19	34.71	27.800	36.1	4.43	61	1323.3	2.731

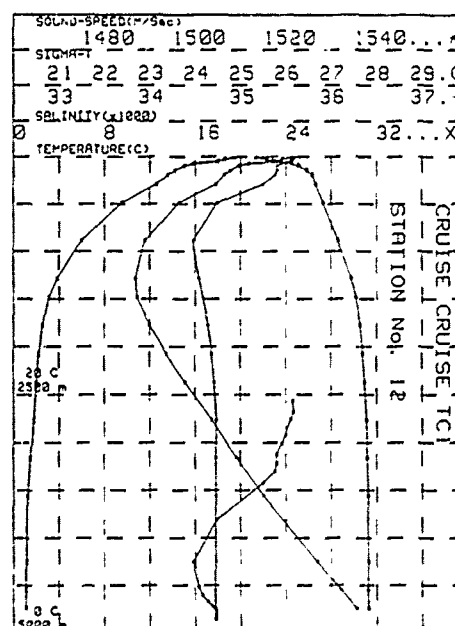
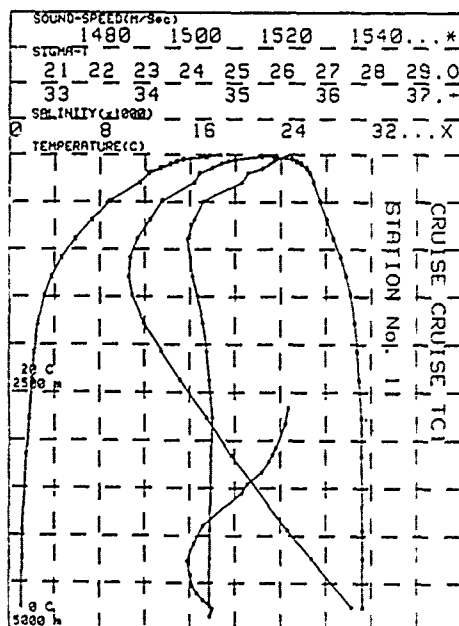
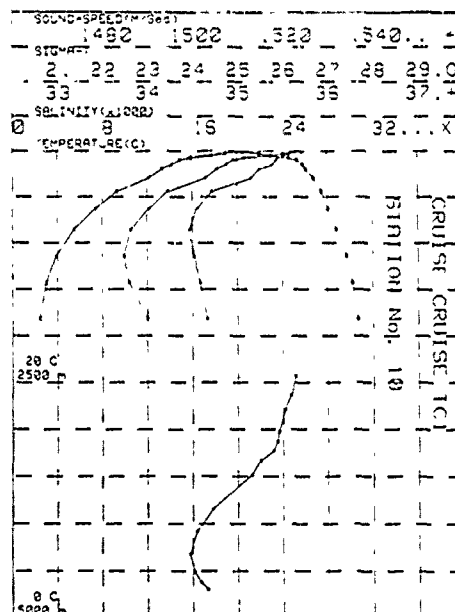
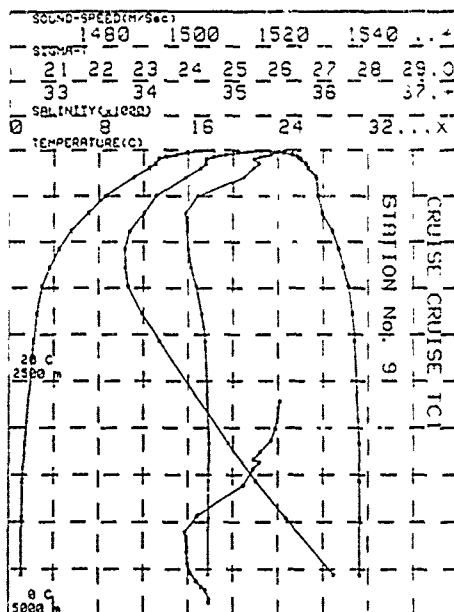


STATION 3 DATE= 09/12/83									
TIME= 035401									
CRUISE TC1									
DEPTH= 4513									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S	Dyn	
m	°C	Pct	CL/T	ML/L	°C	W/sec			
0	17.50	35.593	25.740	224.4	5.32	17.95	1517.1		
05	17.50	35.581	25.733	225.9	5.14	17.94	1517.4		
10	17.470	35.533	25.684	218.4	5.13	17.91	1515.5		
15	17.450	35.413	25.620	177.3	5.14	15.14	1509.6		
20	17.420	35.344	25.558	170.5	5.51	14.67	1508.5		
25	17.430	35.300	25.538	152.7	5.00	13.41	1505.1		
30	17.400	35.218	25.411	147.0	4.92	12.73	1503.0		
35	17.380	35.180	25.380	126.3	4.72	11.14	1499.3		
40	17.350	35.140	25.340	129.2	4.90	8.82	1493.9		
45	17.320	35.100	25.300	115.7	4.31	7.26	1491.2		
50	17.290	35.060	25.260	102.5	4.19	5.71	1488.3		
55	17.260	35.020	25.220	89.3	3.97	4.58	1486.0		
60	17.230	34.980	25.180	76.1	4.02	4.27	1485.7		
65	17.200	34.940	25.140	62.9	3.70	3.64	1484.1		
70	17.170	34.900	25.100	49.7	3.55	3.04	1486.9		
75	17.140	34.860	25.060	36.5	3.54	2.54	1488.3		
80	17.110	34.820	25.020	23.3	3.22	2.19	1491.8		
85	17.080	34.780	24.980	10.1	4.34	1.37	1505.9		
90	17.050	34.740	24.940	-3.1	4.46	.80	1521.2		
95	17.020	34.700	24.900	-16.3	4.40	.77	1524.7		
100	16.990	34.660	24.860	-29.5	4.50	.77	1528.3		

105	16.960	34.620	24.820	-42.7	4.50	.77	1532.0		
110	16.930	34.580	24.780	-55.9	4.50	.77	1535.7		
115	16.900	34.540	24.740	-69.1	4.50	.77	1539.4		
120	16.870	34.500	24.700	-82.3	4.50	.77	1543.1		
125	16.840	34.460	24.660	-95.5	4.50	.77	1546.8		
130	16.810	34.420	24.620	-108.7	4.50	.77	1550.5		
135	16.780	34.380	24.580	-121.9	4.50	.77	1554.2		
140	16.750	34.340	24.540	-135.1	4.50	.77	1557.9		
145	16.720	34.300	24.500	-148.3	4.50	.77	1561.6		
150	16.690	34.260	24.460	-161.5	4.50	.77	1565.3		
155	16.660	34.220	24.420	-174.7	4.50	.77	1569.0		
160	16.630	34.180	24.380	-187.9	4.50	.77	1572.7		
165	16.600	34.140	24.340	-201.1	4.50	.77	1576.4		
170	16.570	34.100	24.300	-214.3	4.50	.77	1580.1		
175	16.540	34.060	24.260	-227.5	4.50	.77	1583.8		
180	16.510	34.020	24.220	-240.7	4.50	.77	1587.5		
185	16.480	33.980	24.180	-253.9	4.50	.77	1591.2		
190	16.450	33.940	24.140	-267.1	4.50	.77	1594.9		
195	16.420	33.900	24.100	-280.3	4.50	.77	1598.6		
200	16.390	33.860	24.060	-293.5	4.50	.77	1602.3		
205	16.360	33.820	24.020	-306.7	4.50	.77	1606.0		
210	16.330	33.780	23.980	-319.9	4.50	.77	1609.7		
215	16.300	33.740	23.940	-333.1	4.50	.77	1613.4		
220	16.270	33.700	23.900	-346.3	4.50	.77	1617.1		
225	16.240	33.660	23.860	-359.5	4.50	.77	1620.8		
230	16.210	33.620	23.820	-372.7	4.50	.77	1624.5		
235	16.180	33.580	23.780	-385.9	4.50	.77	1628.2		
240	16.150	33.540	23.740	-399.1	4.50	.77	1631.9		
245	16.120	33.500	23.700	-412.3	4.50	.77	1635.6		
250	16.090	33.460	23.660	-425.5	4.50	.77	1639.3		
255	16.060	33.420	23.620	-438.7	4.50	.77	1643.0		
260	16.030	33.380	23.580	-451.9	4.50	.77	1646.7		
265	16.000	33.340	23.540	-465.1	4.50	.77	1650.4		
270	15.970	33.300	23.500	-478.3	4.50	.77	1654.1		
275	15.940	33.260	23.460	-491.5	4.50	.77	1657.8		
280	15.910	33.220	23.420	-504.7	4.50	.77	1661.5		
285	15.880	33.180	23.380	-517.9	4.50	.77	1665.2		
290	15.850	33.140	23.340	-531.1	4.50	.77	1668.9		
295	15.820	33.100	23.300	-544.3	4.50	.77	1672.6		
300	15.790	33.060	23.260	-557.5	4.50	.77	1676.3		
305	15.760	33.020	23.220	-570.7	4.50	.77	1680.0		
310	15.730	32.980	23.180	-583.9	4.50	.77	1683.7		
315	15.700	32.940	23.140	-597.1	4.50	.77	1687.4		
320	15.670	32.900	23.100	-610.3	4.50	.77	1691.1		
325	15.640	32.860	23.060	-623.5	4.50	.77	1694.8		
330	15.610	32.820	23.020	-636.7	4.50	.77	1698.5		
335	15.580	32.780	22.980	-649.9	4.50	.77	1702.2		
340	15.550	32.740	22.940	-663.1	4.50	.77	1705.9		
345	15.520	32.700	22.900	-676.3	4.50	.77	1709.6		
350	15.490	32.660	22.860	-689.5	4.50	.77	1713.3		
355	15.460	32.620	22.820	-702.7	4.50	.77	1717.0		
360	15.430	32.580	22.780	-715.9	4.50	.77	1720.7		
365	15.400	32.540	22.740	-729.1	4.50	.77	1724.4		
370	15.370	32.500	22.700	-742.3	4.50	.77	1728.1		
375	15.340	32.460	22.660	-755.5	4.50	.77	1731.8		
380	15.310	32.420	22.620	-768.7	4.50	.77	1735.5		
385	15.280	32.380	22.580	-781.9	4.50	.77	1739.2		
390	15.250	32.340	22.540	-795.1	4.50	.77	1742.9		
395	15.220	32.300	22.500	-808.3	4.50	.77	1746.6		
400	15.190	32.260	22.460	-821.5	4.50	.77	1750.3		
405	15.160	32.220	22.420	-834.7	4.50	.77	1754.0		
410	15.130	32.180	22.380	-847.9	4.50	.77	1757.7		
415	15.100	32.140	22.340	-861.1	4.50	.77	1761.4		
420	15.070	32.100	22.300	-874.3	4.50	.77	1765.1		
425	15.040	32.060	22.260	-887.5	4.50	.77	1768.8		
430	15.010	32.020	22.220	-900.7	4.50	.77	1772.5		
435	14.980	31.980	22.180	-913.9	4.50	.77	1776.2		
440	14.950	31.940	22.140	-927.1	4.50	.77	1779.9		
445	14.920	31.900	22.100	-940.3	4.50	.77	1783.6		
450	14.890	31.860	22.060	-953.5	4.50	.77	1787.3		
455	14.860	31.820	22.020	-966.7	4.50	.77	1791.0		
460	14.830	31.780	21.980	-979.9	4.50	.77	1794.7		
465	14.800	31.740	21.940	-993.1	4.50	.77	1798.4		
470	14.770	31.700	21.900	-1006.3	4.50	.77	1802.1		
475	14.740	31.660	21.860	-1019.5	4.50	.77	1805.8		
480	14.710	31.620	21.820	-1032.7	4.50	.77	1809.5		
485	14.680	31.580	21.780	-1045.9	4.50	.77	1813.2		
490	14.650	31.540	21.740	-1059.1	4.50	.77	1816.9		
495	14.620	31.500	21.700	-1072.3	4.50	.77	1820.6		
500	14.590	31.460	21.660	-1085.5	4.50	.77	1824.3		
505	14.560	31.420	21.620	-1098.7	4.50	.77	1828.0		
510	14.530	31.380	21.580	-1111.9	4.50	.77	1831.7		
515	14.500	31.340	21.540	-1125.1	4.50	.77	1835.4		
520	14.470	31.300	21.500	-1138.3	4.50	.77	1839.1		
525	14.440	31.260	21.460	-1151.5	4.50	.77	1842.8		
530	14.410	31.220	21.420	-1164.7	4.50	.77	1846.5		
535	14.380	31.180	21.380	-1177.9	4.50	.77	1850.2		
540	14.350	31.140	21.340	-1191.1	4.50	.77	1853.9		
545	14.320	31.100	21.300	-1204.3	4.50	.77	1857.6		
550	14.290	31.060	21.260	-1217.5	4.50	.77	1861.3		
555	14.260	31.020	21.220	-1230.7	4.50	.77	1865.0		
560	14.230	30.980	21.180	-1243.9	4.50	.77	1868.7		
565	14.200	30.940	21.140	-1257.1	4.50	.77	1872.4		
570	14.170	30.900	21.100	-1270.3	4.50	.77	1876.1		
575	14.140	30.860	21.060	-1283.5	4.50	.77	1879.8		
580	14.110	30.820	21.020	-1296.7	4.50	.77	1883.5		
585	14.080	30.780	20.980	-1309.9	4.50	.77	1887.2		
590	14.050	30.740	20.940	-1323.1	4.50	.77	1890.9		
595	14.020	30.700	20.900	-1336.3	4.50	.77	1894.6		
600	13.990	30.660	20.860	-1349.5	4.50	.77	1898.3		
605	13.960	30.620	20.820	-1362.7	4.50	.77	1902.0		
610	13.930	30.580	20.780	-1375.9	4.50	.77	1905.7		
615	13.900	30.540	20.740	-1389.1	4.50	.77	1909.4		
620	13.870	30.500	20.700	-1402.3	4.50	.77	1913.1		
625	13.840	30.460	20.660	-1415.5	4.50	.77	1916.8		
630	13.810	30.420	20.620	-1428.7	4.50	.77	1920.5		
635	13.780	30.380	20.580	-1441.9	4.50	.77	1924.2		



STATION	10	35 45	150.446	CRUISE TC1					
DATE= 12/17/83	TIME= 2030ZLT	DEPTTH	2200						
DEPTH	TDOP	SALINITY	SIGMA-T	A.S.V.	CHL	OC2	POT./TDP	S.S	
#		Pdb		CL/T	M/L			M/sec	Oym.#
ORIS	0	20.520	35.637	29.110	284.3	5.23	20.52	1524.3	
ORIS	5	19.560	35.566	29.141	288.0	4.82	18.93	1520.3	
ORIS	50	17.670	35.522	29.254	224.7	4.49	17.66	1517.0	
ORIS	75	15.750	35.452	28.133	167.4	4.91	15.74	1511.5	
ORIS	125	13.830	35.432	26.930	371.1	5.20	14.87	1507.2	
ORIS	150	14.140	35.366	26.817	560.7	5.29	14.12	1507.6	
ORIS	198	13.270	35.243	26.523	155.4	4.94	13.28	1505.9	
ORIS	297	12.110	35.152	26.687	142.0	5.13	12.07	1502.9	
ORIS	444	9.230	34.716	26.659	127.0	4.50	9.18	1494.3	
ORIS	634	7.370	34.540	27.012	113.9	4.00	7.31	1480.3	
ORIS	854	5.460	34.466	27.199	96.2	4.11	5.59	1486.3	
ORIS	1142	3.690	34.519	27.151	75.4	3.74	3.60	1484.7	
ORIS	1430	3.030	34.566	27.532	62.2	3.54	2.93	1483.9	
ORIS	1818	2.410	34.658	27.644	51.7	3.72	2.26	1480.9	
ISL	0	20.52	35.64	29.110	264.3	5.23	20.52	1524.3	0.000
ISL	10	19.68	35.62	29.278	198.0	5.08	19.64	1522.8	.028
ISL	25	18.83	35.59	29.481	249.0	4.82	18.83	1520.2	.047
ISL	50	17.67	35.52	29.154	224.7	4.49	17.66	1517.0	.126
ISL	75	15.75	35.45	28.133	167.4	4.91	15.74	1511.5	.177
ISL	100	14.89	35.43	28.300	371.3	5.20	14.87	1509.2	.222
ISL	150	14.14	35.36	26.437	106.6	5.29	14.12	1507.6	.305
ISL	200	14.14	35.28	26.574	159.3	4.94	13.25	1505.4	.384
ISL	250	12.75	35.12	26.813	148.1	5.10	12.72	1504.4	.460
ISL	300	12.04	35.14	26.861	141.6	5.11	12.00	1502.7	.533
ISL	400	9.96	34.82	26.812	131.0	4.85	9.91	1499.5	.609
ISL	500	7.68	34.66	27.923	109.6	4.42	8.61	1488.2	.756
ISL	600	7.68	34.57	29.564	116.4	4.33	7.63	1491.0	.918
ISL	800	5.67	34.48	27.155	100.4	4.50	5.60	1487.1	1.123
ISL	1000	4.58	34.49	27.133	84.7	4.10	4.58	1486.1	1.347
ISL	1200	3.50	34.58	27.996	8.0	3.60	3.28	1485.2	1.545
ISL	1500	2.87	34.60	27.578	56.7	3.57	2.76	1486.5	1.674



Cruise RANRL 1/84 (SEAMAP 1)

Notes for cruise RANRL 1/84 (SEAMAP 1)

No remarks.

Other sources of data for cruise RANRL 1/84 (SEAMAP 1)

Hall, M. and Bell, M.J. (1986)

"SEAMAP 1 Data Report: Volume Backscattering in the Tasman Sea and the West South Pacific Ocean".

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Hamilton, L.J. (1989)

"Temperature Inversions at Intermediate Depths in the Antarctic Intermediate Waters of the South-west Pacific".

Australian Journal of Marine and Freshwater Research Vol.41, No.3, pp.325-352

Hamilton, L.J. and Boyle, J.A. (1988)

"Oceanographic Data Report for South Pacific Cruises in the SEAMAP Series. Part 1: Summer cruise data".

WSRL Technical Memorandum No.31/88

Contains XBT cross-sections, satellite SST fields, geostrophic current profiles, surface samples, thermo-salinograph data, wind vectors, sea state and swell height diagrams, along the cruise track.

Jenkins, C.J. (1985)

"Geological/Geophysical Results of the SEAMAP 1 (COOK 1/84) Cruise, With Derived Geoacoustic Models: South Tasman Sea and New Zealand regions".

Ocean Sciences Institute Report No.13

Scott, B.D. (1984)

"RAN Research Laboratory Oceanographic Cruise Report RANRL 1/84".

(Unpublished document). A narrative of the actual cruise

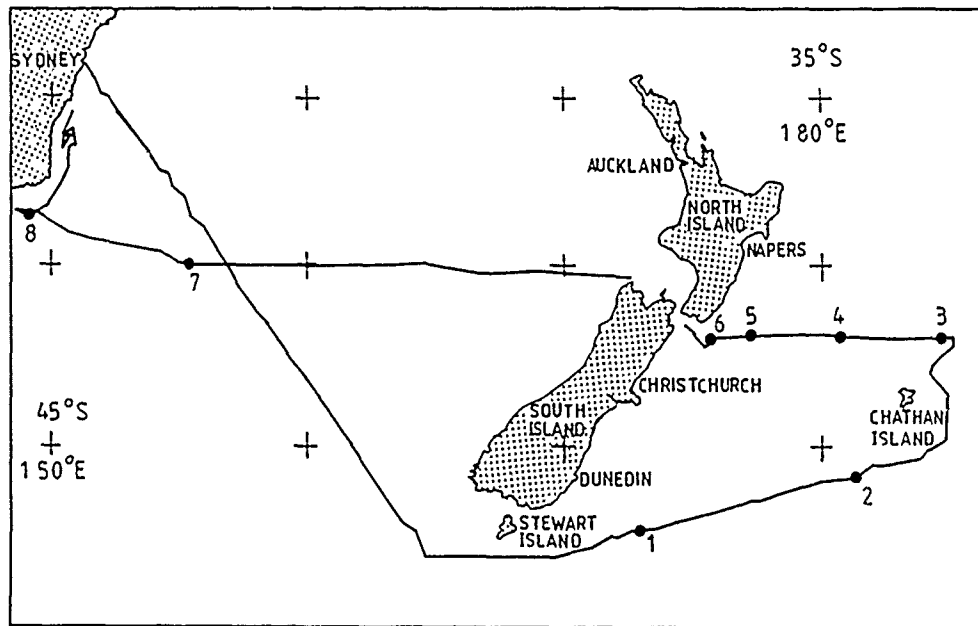


Figure 9. Nansen station positions for cruise RANRL 1/84 (SEAMAP 1)

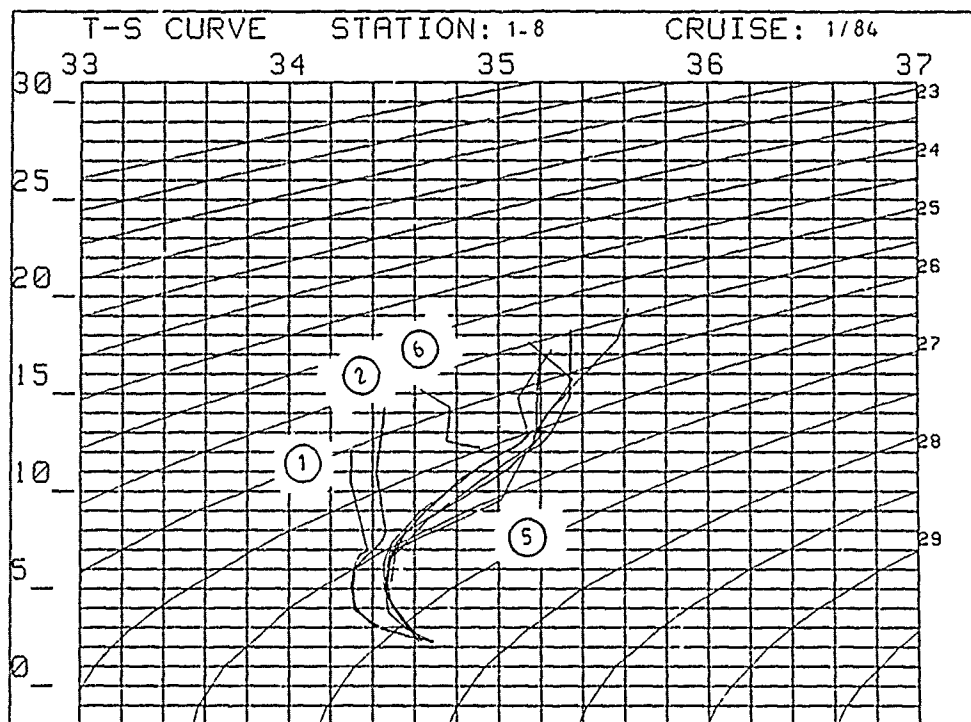


Figure 10. Temperature-salinity curves for cruise RANRL 1/84 (SEAMAP 1)

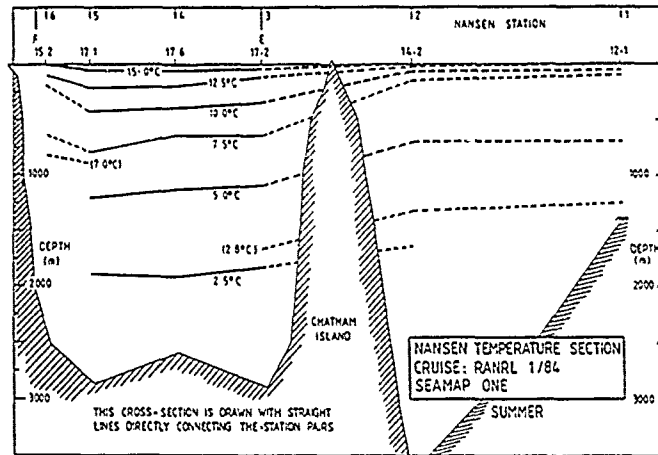


Figure 11. Temperature cross-section about Chatham Rise in January 1984 for survey RANRL 1/84 (SEAMAP 1)

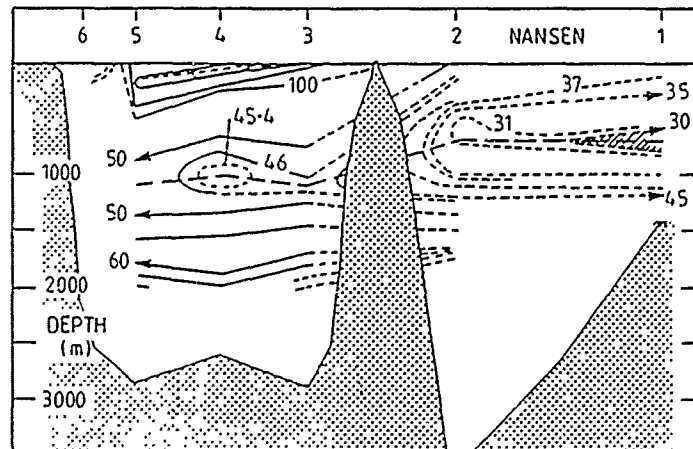
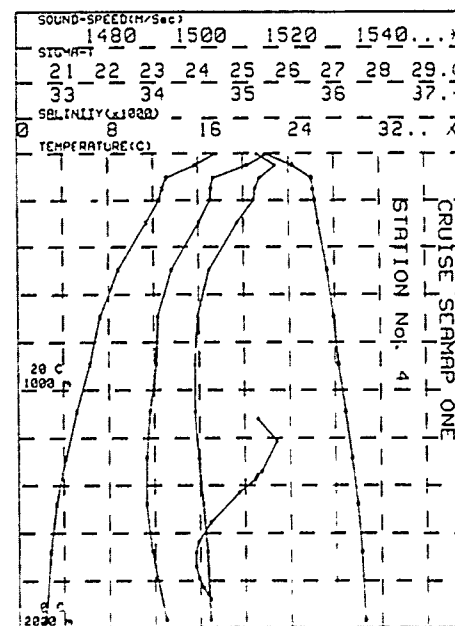
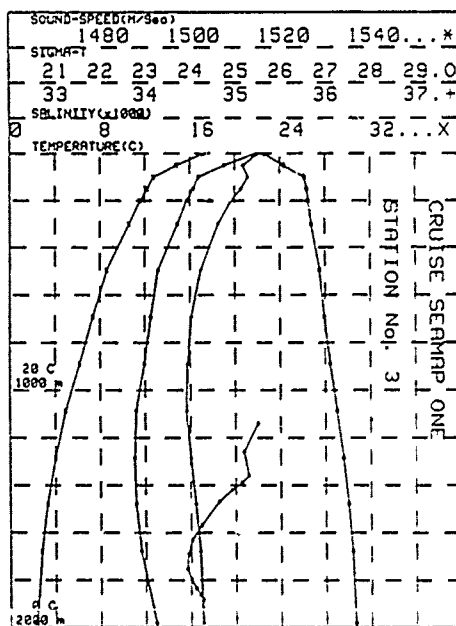
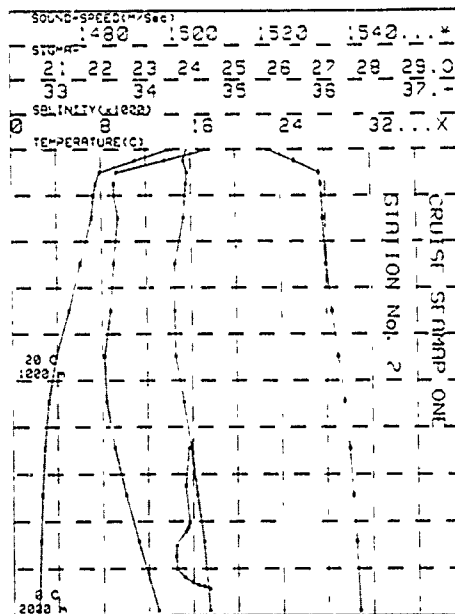
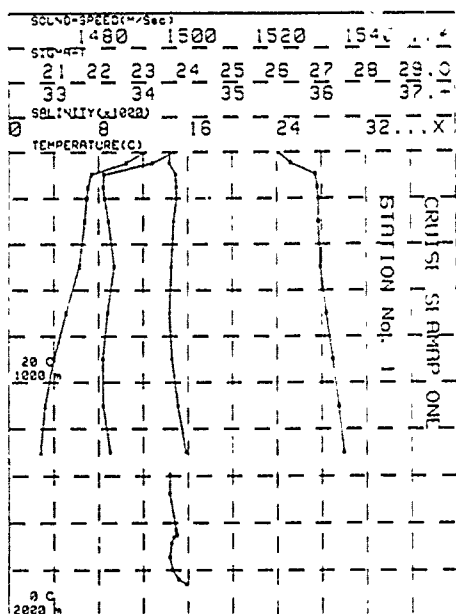


Figure 12. Salinity cross-section about Chatham Rise in January 1984 for survey RANRL 1/84 (SEAMAP 1)

STATION 1				47.175 173.04E				SEANAP ONE									
DATE= 31/01/84				TIME= 2105GMT				DEPTH= 1400									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	OC	POT	TEMP	S.S							
m	°C	Pct		°C				db	°C	M/sec	Dyn.m						
005	0	12.070	34.299	28.032	196.7	0.00	12.07	1496.8	0.000								
005	48	14.500	34.295	28.318	170.7	0.00	10.49	1492.1	005	48	14.500	34.295	28.318	170.7	0.00	10.49	1492.1
005	87	7.500	34.385	28.668	118.6	0.00	7.33	1481.2	005	87	7.500	34.385	28.668	118.6	0.00	7.33	1481.2
005	152	7.070	34.372	28.915	115.2	0.00	7.08	1481.0	005	152	7.070	34.372	28.915	115.2	0.00	7.08	1481.0
005	202	6.950	34.378	28.934	114.1	0.00	6.83	1481.4	005	202	6.950	34.378	28.934	114.1	0.00	6.83	1481.4
005	302	6.770	34.340	28.930	113.8	0.00	6.74	1482.2	005	302	6.770	34.340	28.930	113.8	0.00	6.74	1482.2
005	498	6.280	34.313	28.978	113.9	0.00	6.24	1483.5	005	498	6.280	34.313	28.978	113.9	0.00	6.24	1483.5
005	701	5.090	34.295	27.106	102.6	0.00	5.03	1482.0	005	701	5.090	34.295	27.106	102.6	0.00	5.03	1482.0
005	900	4.020	34.322	27.245	88.5	0.00	3.85	1480.9	005	900	4.020	34.322	27.245	88.5	0.00	3.85	1480.9
005	1103	3.220	34.388	27.378	78.9	0.00	3.14	1481.0	005	1103	3.220	34.388	27.378	78.9	0.00	3.14	1481.0
005	1300	2.790	34.477	27.487	68.7	0.00	2.70	1482.8	005	1300	2.790	34.477	27.487	68.7	0.00	2.70	1482.8
ISL	0	12.07	34.30	28.032	196.7	0.00	12.07	1496.8	0.000								
ISL	10	11.87	34.30	28.070	193.3	0.00	11.88	1496.3	0.019								
ISL	15	11.44	34.30	28.148	186.2	0.00	11.44	1499.1	.047								
ISL	50	10.32	34.30	28.348	187.7	0.00	10.31	1491.4	.082								
ISL	75	8.43	34.34	28.680	136.5	0.00	8.43	1484.9	.120								
ISL	100	7.34	34.37	28.872	118.6	0.00	7.33	1481.2	.163								
ISL	150	7.08	34.37	28.913	115.3	0.00	7.08	1481.0	.221								
ISL	200	6.95	34.38	28.934	114.1	0.00	6.84	1481.3	.279								
ISL	250	6.87	34.36	28.932	113.2	0.00	6.85	1481.6	.336								
ISL	300	6.77	34.34	28.931	113.8	0.00	6.75	1482.2	.383								
ISL	400	6.43	34.33	28.943	114.9	0.00	6.37	1482.2	.509								
ISL	500	6.27	34.31	28.978	113.9	0.00	6.23	1483.5	.623								
ISL	600	5.87	34.30	27.040	106.5	0.00	5.62	1482.7	.734								
ISL	800	4.52	34.30	27.178	96.0	0.00	4.48	1481.3	.929								
ISL	1000	3.58	34.35	27.312	83.9	0.00	3.51	1481.0	1.118								
ISL	1300	2.79	34.48	27.487	68.7	0.00	2.70	1482.6	1.342								

STATION 3				41.595				175.07W				SEANAP ONE			
DATE 05/02/84				TIME 2135GMT								DEPTH= 2808			
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	OC	POT	TEMP	S.S					
		Pct								W/Spc					Oym.m
005	0	17.190	35.250	25.662	231.8	0.00	17.19	1514.4							
005	50	14.800	35.082	26.087	192.8	0.00	14.79	1507.7							
005	100	12.800	35.143	26.544	150.6	0.00	12.79	1502.0							
005	150	12.230	35.070	26.800	144.5	0.00	12.21	1500.8							
005	200	11.810	34.981	26.833	144.4	0.00	11.58	1499.4							
005	300	10.810	34.816	26.703	139.7	0.00	10.57	1497.3							
005	498	8.620	34.620	26.621	125.3	0.00	8.57	1492.9							
005	683	7.290	34.515	26.782	117.6	0.00	7.32	1491.4							
005	889	6.200	34.470	27.058	108.6	0.00	6.12	1489.9							
005	1087	4.930	34.458	27.254	92.6	0.00	4.84	1488.0							
005	1288	4.020	34.501	27.390	78.3	0.00	3.92	1487.8							
005	1479	3.390	34.556	27.503	68.1	0.00	3.19	1487.9							
005	1679	2.780	34.503	27.590	59.3	0.00	2.64	1489.0							
005	1942	2.350	34.633	27.651	53.4	0.00	2.19	1492.4							
ISL	0	17.19	35.25	25.662	231.8	0.00	17.19	1514.4		0.000					
ISL	10	16.88	35.20	25.744	224.3	0.00	16.86	1513.0		023					
ISL	20	15.99	35.14	25.871	212.7	0.00	15.94	1510.9		058					
ISL	30	15.09	35.07	26.000	199.9	0.00	14.79	1507.7		106					
ISL	75	13.82	35.13	26.366	167.0	0.00	13.81	1504.3		152					
ISL	100	12.90	35.14	26.546	158.6	0.00	12.79	1502.0		182					
ISL	120	12.27	35.07	26.810	146.5	0.00	12.21	1500.8		246					
ISL	200	11.31	34.98	26.833	144.4	0.00	11.58	1499.4		359					
ISL	250	11.11	34.86	26.663	142.3	0.01	11.08	1496.3		411					
ISL	300	10.81	34.62	26.703	139.7	0.01	10.57	1497.3		441					
ISL	400	9.70	34.63	26.623	125.3	0.01	9.45	1494.7		485					
ISL	500	8.59	34.62	26.683	125.2	0.00	8.54	1492.9		748					
ISL	600	7.75	34.58	26.931	121.7	0.00	7.80	1492.1		869					
ISL	800	6.75	34.48	27.048	112.0	0.01	6.87	1490.6		1103					
ISL	1000	5.88	34.44	27.191	98.7	0.01	5.96	1489.7		1314					
ISL	1200	5.04	34.51	27.299	78.4	0.00	5.08	1488.6		1579					
ISL	1300	3.98	34.55	27.514	67.0	0.00	3.12	1486.0		1725					

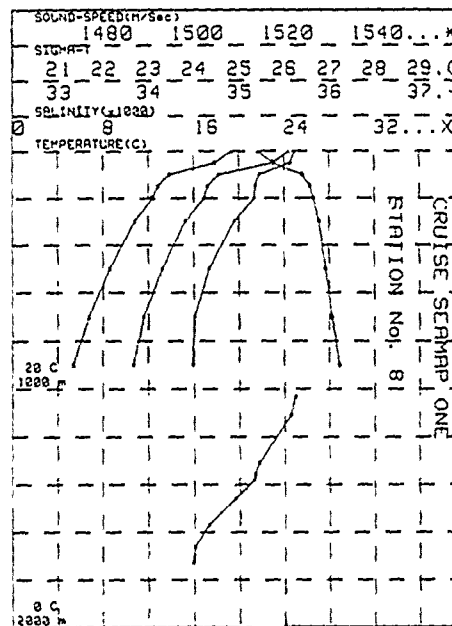
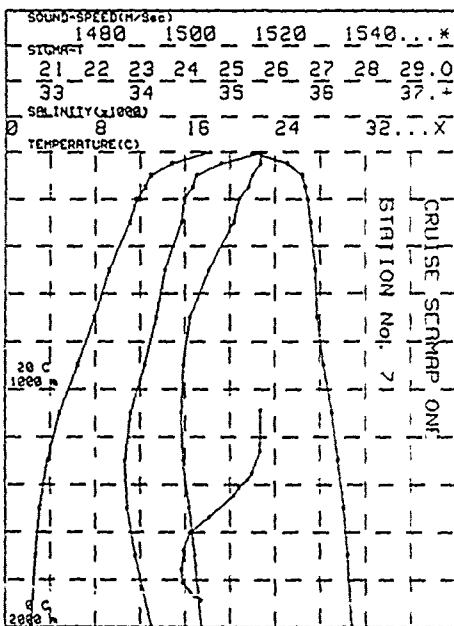
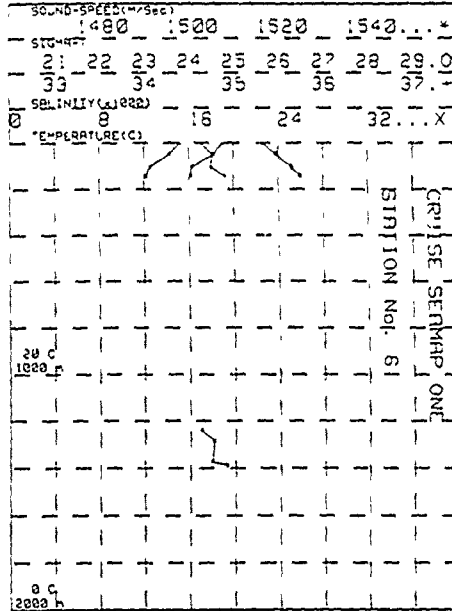
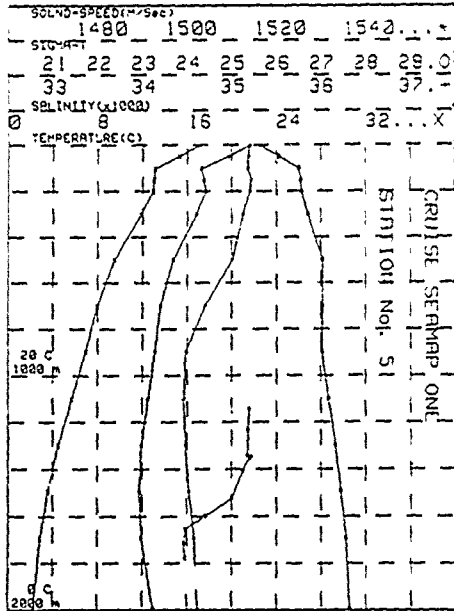


STATION 5		42.045		177.31E		SEANAP ONE		DEPTH= 2860	
DATE= 8/2/84		TIME= 0050GHT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	°C	ML/L	°C	°C	°C	M/Sec	
005	0	35.199	25.642	233.7	0.00	17.11	1514.1	0.000	
005	50	35.187	25.651	196.4	0.00	15.29	1508.4		
005	103	35.181	25.504	154.3	0.00	13.13	1503.3		
005	132	35.223	26.354	151.1	0.00	13.04	1503.8		
005	202	35.240	26.365	151.4	0.00	12.81	1504.2		
005	302	35.127	26.715	139.3	0.00	11.82	1502.1		
005	500	35.009	27.039	111.3	0.00	9.47	1496.9		
005	701	34.708	27.043	112.9	0.00	7.84	1484.1		
005	898	34.483	27.024	118.0	0.00	6.82	1482.8		
005	1101	34.465	27.199	102.5	0.00	5.59	1481.3		
005	1299	34.481	27.321	87.3	0.00	4.36	1480.8		
005	1484	34.523	27.449	74.2	0.00	3.48	1480.4		
005	1684	34.575	27.565	62.2	0.00	2.78	1480.9		
005	1953	34.620	27.643	54.0	0.00	2.18	1482.4		
ISL	0	35.20	25.642	233.7	0.00	17.11	1514.1	0.000	
ISL	10	35.20	25.722	228.4	0.00	16.78	1513.3	.023	
ISL	25	35.19	25.844	215.3	0.00	16.23	1511.9	.058	
ISL	50	35.19	26.051	196.4	0.00	15.29	1508.4	.106	
ISL	75	35.18	26.317	171.6	0.00	14.00	1505.6	.134	
ISL	100	35.18	26.481	155.8	0.00	13.19	1503.4	.166	
ISL	150	35.22	26.553	131.2	0.00	12.04	1503.8	.272	
ISL	200	35.21	26.584	131.4	0.00	12.92	1504.2	.348	
ISL	250	35.17	26.636	145.7	0.00	12.40	1503.3	.422	
ISL	300	35.13	26.712	139.3	0.00	11.84	1502.2	.464	
ISL	400	35.08	26.815	121.9	0.00	10.55	1499.2	.626	
ISL	500	35.01	27.039	111.5	0.00	9.47	1496.9	.745	
ISL	600	34.83	27.041	112.0	0.00	8.66	1495.3	.856	
ISL	800	34.57	27.034	114.5	0.00	7.29	1493.5	1.043	
ISL	1000	34.47	27.095	109.5	0.00	6.20	1482.1	1.310	
ISL	1300	34.48	27.322	87.2	0.00	4.38	1480.8	1.606	
ISL	1500	34.53	27.453	73.8	0.00	3.48	1480.4	1.767	

STATION 7		40.015		155.28E		SEANAP ONE		DEPTH= 4605	
DATE= 16/02/84		TIME= 0114GHT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	°C	ML/L	°C	°C	°C	M/Sec	
005	0	35.249	25.475	249.5	0.00	18.25	1517.8	0.000	
005	50	35.258	26.278	175.0	0.00	14.80	1508.0		
005	100	35.247	26.601	145.3	0.00	12.91	1502.6		
005	150	35.203	26.662	140.7	0.00	12.42	1501.7		
005	200	35.096	26.721	134.2	0.00	11.66	1499.9		
005	300	35.043	26.791	131.6	0.00	11.06	1498.3		
005	500	34.768	26.895	124.7	0.00	9.20	1493.6		
005	700	34.558	26.936	122.9	0.00	7.86	1493.6		
005	897	34.482	27.084	108.5	0.00	6.38	1491.0		
005	1097	34.483	27.246	91.4	0.00	4.77	1487.9		
005	1297	34.750	27.395	78.1	0.00	3.65	1486.6		
005	1497	34.548	27.521	65.6	0.00	2.53	1487.1		
005	1697	34.612	27.607	57.4	0.00	2.53	1486.8		
005	1994	34.685	27.695	49.3	0.00	2.18	1492.5		
ISL	0	35.34	25.475	249.5	0.00	18.25	1517.8	0.000	
ISL	10	35.34	25.674	231.0	0.00	17.44	1515.4	.024	
ISL	25	35.34	25.935	206.6	0.00	16.33	1512.3	.058	
ISL	50	35.34	26.278	175.0	0.00	14.80	1508.0	.106	
ISL	75	35.29	26.471	157.0	0.00	13.68	1504.7	.148	
ISL	100	35.25	26.601	145.3	0.00	12.91	1502.6	.186	
ISL	150	35.20	26.662	140.7	0.00	12.42	1501.7	.258	
ISL	200	35.10	26.721	134.2	0.00	11.66	1499.9	.327	
ISL	250	35.06	26.758	133.8	0.00	11.40	1499.7	.394	
ISL	300	35.04	26.781	131.6	0.00	11.06	1499.3	.461	
ISL	400	34.99	26.851	127.5	0.00	10.07	1497.2	.581	
ISL	500	34.77	26.895	124.7	0.00	8.20	1493.6	.717	
ISL	600	34.64	26.902	123.8	0.00	6.55	1494.7	.841	
ISL	800	34.51	27.007	116.8	0.00	7.12	1492.4	1.084	
ISL	1000	34.47	27.184	99.6	0.00	5.48	1488.2	1.302	
ISL	1300	34.48	27.387	77.9	0.00	3.64	1486.6	1.548	
ISL	1500	34.53	27.522	65.4	0.00	2.92	1487.1	1.710	

STATION 8		42.088		175.40E		SEANAP ONE		DEPTH= 2532	
DATE= 04/02/84		TIME= 1630GHT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	°C	ML/L	°C	°C	°C	M/Sec	
005	0	34.830	25.648	233.1	0.00	15.18	1507.3	0.000	
005	50	34.876	25.931	205.7	0.00	14.26	1505.6		
005	109	34.750	26.291	174.7	0.00	12.53	1500.7		
005	144	34.909	26.478	157.9	0.00	12.19	1500.4		
ISL	0	34.83	25.648	233.1	0.00	15.18	1507.3	0.000	
ISL	10	34.87	25.708	227.7	0.00	15.05	1507.3	.023	
ISL	25	34.72	25.799	218.5	0.00	14.80	1506.8	.057	
ISL	50	34.77	25.951	205.7	0.00	14.26	1505.6	.110	
ISL	75	34.76	26.117	190.8	0.00	13.29	1502.7	.158	
ISL	100	34.75	26.284	177.2	0.00	12.62	1501.0	.206	

STATION 8		38.375		148.52E		SEANAP ONE		DEPTH= 2755	
DATE= 18/2/84		TIME= 0901GHT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	°C	ML/L	°C	°C	°C	M/Sec	
005	0	35.818	25.412	255.5	0.00	19.32	1521.0	0.000	
005	50	35.868	26.756	224.4	0.00	17.79	1517.4		
005	100	35.810	26.287	184.8	0.00	15.80	1505.5		
005	150	35.173	26.582	150.3	0.00	12.81	1503.0		
005	200	35.164	26.642	145.9	0.00	12.34	1502.3		
005	300	34.893	26.770	133.4	0.00	10.78	1498.2		
005	500	34.647	26.918	121.9	0.00	8.57	1493.1		
005	700	34.507	27.062	108.3	0.00	6.70	1488.0		
005	900	34.483	27.221	94.8	0.00	5.30	1486.8		
ISL	0	35.82	25.412	255.5	0.00	19.32	1521.0	0.000	
ISL	10	35.81	25.458	251.6	0.00	19.21	1520.9	.025	
ISL	25	35.59	25.548	243.5	0.00	18.66	1520.2	.062	
ISL	50	35.57	25.758	224.4	0.00	17.79	1517.4	.120	
ISL	75	35.38	26.137	186.9	0.00	15.42	1510.3	.172	
ISL	100	35.22	26.297	164.8	0.00	13.80	1505.5	.217	
ISL	150	35.17	26.582	150.3	0.00	12.81	1503.0	.298	
ISL	200	35.18	26.642	145.9	0.00	12.34	1502.3	.370	
ISL	250	35.05	26.711	138.3	0.00	11.53	1500.1	.440	
ISL	300	34.85	26.770	133.4	0.00	10.78	1498.2	.508	
ISL	400	34.79	26.844	127.8	0.00	9.83	1495.5	.629	
ISL	500	34.67	26.918	121.9	0.00	8.57	1493.1	.764	
ISL	600	34.57	26.948	115.9	0.00	7.58	1490.8	.882	
ISL	800	34.48	27.140	102.2	0.00	5.95	1487.7	1.100	



Cruise RANRL 24/83

Notes for cruise RANRL 24/83

Jeffrey (1984) gives data listings for the 6 stations taken on this cruise. See 'Other sources of data for cruise RANRL 30/82' on page 10. The data has been reworked for the listings in the present document, leading to a revision of some data given by Jeffrey.

Additional Nansen data for cruise RANRL 24/83

Depth (m)	T	S	
165	13.02	(35.39)	Station 1
35 ± 10	13.97	34.78	Station 4
?	13.93	34.79	Station 4
35	13.74	34.80	Pretrip values of unknown quantity
79	12.43	34.88	
123	11.51	35.07	

The bottle shown as being 17 m for station 4 actually lies somewhere between 12 and 22 m (17 ± 5). Since the Nansen data and XBT # 31 (1700Z) show it to be in a mixed layer, it is assumed to be a good value.

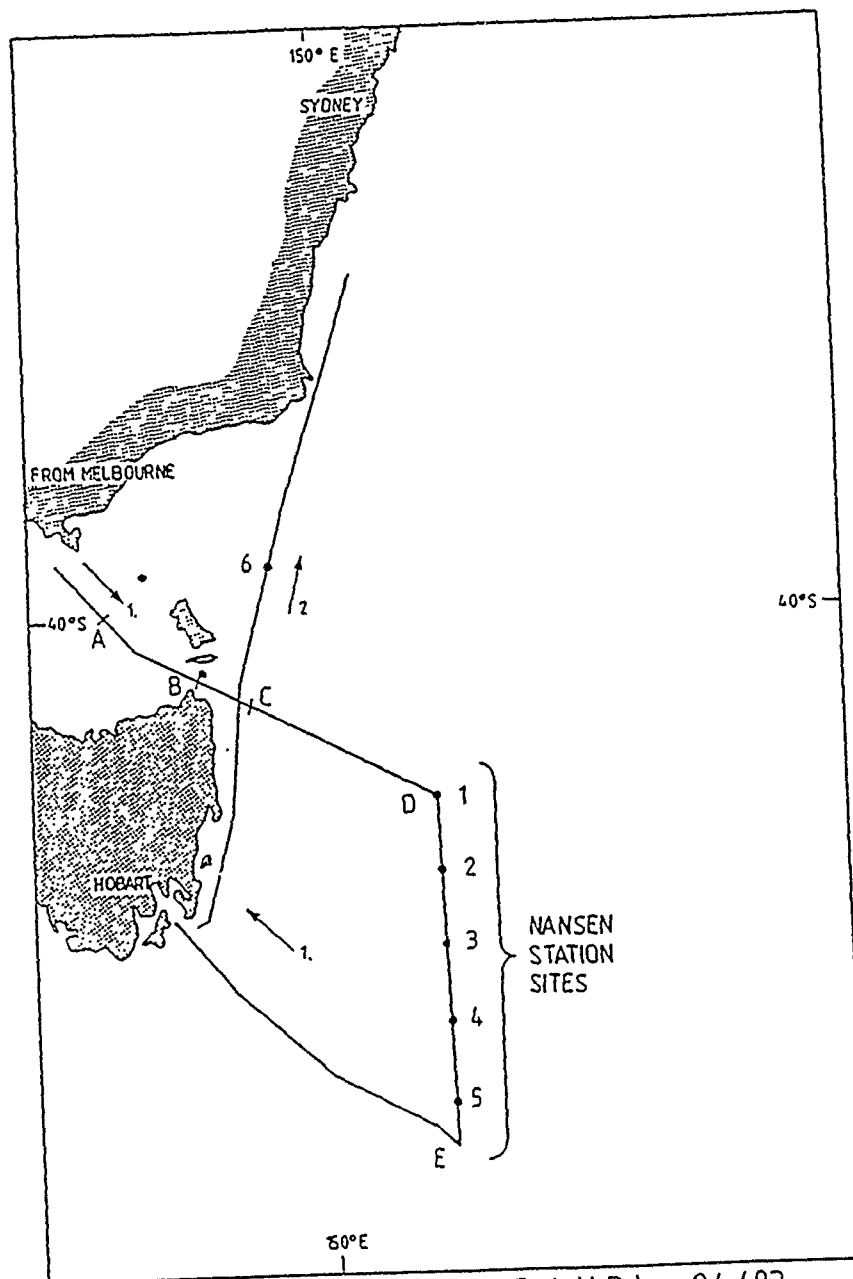
Jeffrey (1984) experienced difficulty in obtaining consistent conductivity readings for some samples, and this is reflected as minor salinity irregularities in the tables (at the surface for stations 5 and 6). The surface values at stations 5 and 6 were artificially adjusted, but deeper suspect values are not included in the present report. Contamination of samples by salps appeared to be the cause.

Other sources of data for cruise RANRL 24/83

Hamilton, L.J. and Schneider, P. (1984)

"Cruise Leaders Report for RANRL Cruise 24/83 18 February to 5 March 1984 on HMAS Kimbla". (Unpublished document). A narrative of the actual cruise.

Also see other sources of data for cruise RANRL 30/82.



Rough cruise track R.A.N.R.L. 24/83.
 Leg 1. 18-26 February, 1984.
 Leg 2. 29 February - 5 March, 1984.

Figure 13. Nansen station positions for survey RANRL 24/83

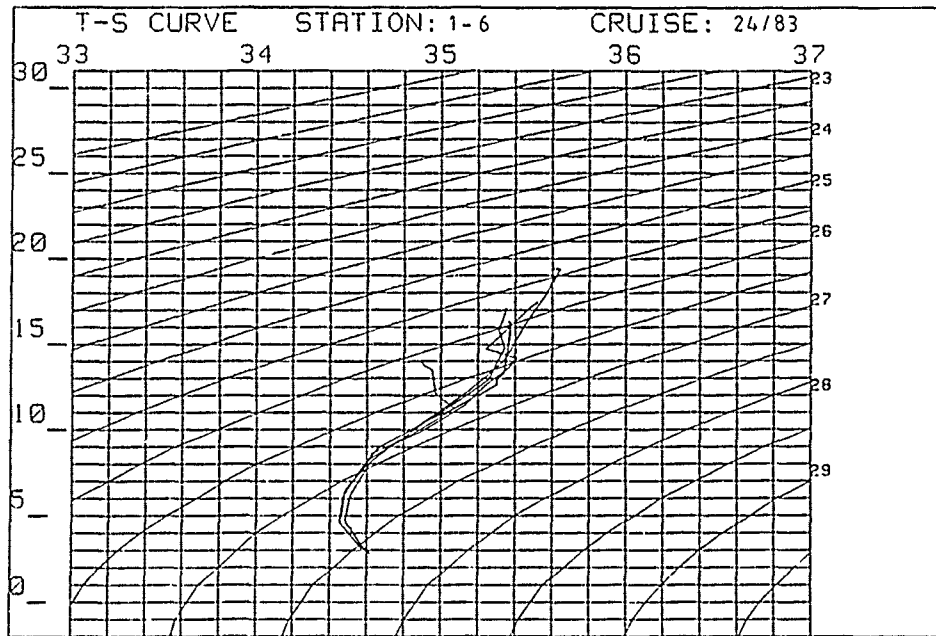
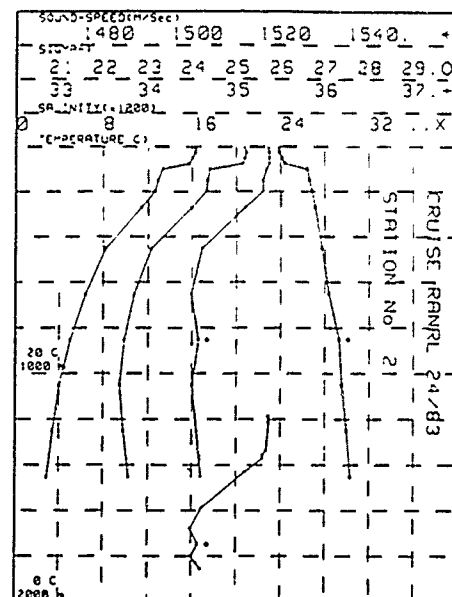
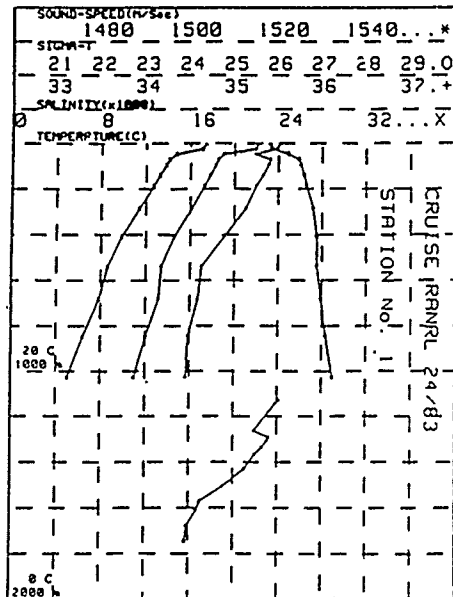


Figure 14. Temperature-salinity curves for Cruise RANRL 24/83



STATION 1		41.595	151.32E	RAWRL 24/83		4500		
DATE= 21/02/1984		TIME= 2028 LOCAL		DEPTH=		4500		
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. B
m	°C	PPT	CL/T	ML/L	°C	ML/L	ML/L	
0	17.43	35.52	25.811	217.6	0.00	17.43	1515.5	0.000
25	17.13	35.480	25.833	214.5	0.00	17.13	1514.9	
47	16.140	35.243	26.215	190.7	0.00	16.14	1507.6	
71	14.170	35.410	26.449	157.2	0.00	14.18	1504.4	
94	13.680	35.290	26.515	153.5	0.00	13.67	1505.8	
140	13.290	35.330	26.590	147.4	0.00	13.27	1504.5	
185	12.710	35.250	26.645	143.3	0.00	12.66	1503.2	
284	11.430	35.130	26.796	129.8	0.00	11.39	1500.3	
406	9.680	34.890	26.887	124.2	0.00	9.63	1496.5	
536	8.610	34.630	26.890	125.2	0.00	8.55	1483.6	
681	7.830	34.390	26.977	118.5	0.00	7.78	1483.0	
844	6.440	34.480	27.065	108.7	0.00	6.38	1480.1	
1028	5.080	34.480	27.240	93.5	0.00	4.97	1467.6	
151	17.43	35.52	25.811	217.6	0.00	17.43	1515.5	0.000
151	17.31	35.50	25.828	216.3	0.00	17.30	1515.2	.022
151	18.29	35.44	25.871	212.8	0.00	18.96	1514.5	.054
151	16.05	35.27	26.258	178.8	0.00	16.65	1507.4	.103
151	14.12	35.41	26.477	156.5	0.00	14.11	1506.3	.144
151	13.00	35.34	26.528	152.6	0.00	13.78	1505.7	.183
151	13.16	35.31	26.602	146.8	0.00	13.14	1504.9	.237
151	12.51	35.24	26.673	141.0	0.00	12.49	1502.9	.330
151	11.87	35.18	26.754	134.3	0.00	11.83	1501.3	.399
151	11.21	35.10	26.814	125.5	0.00	11.17	1499.8	.440
151	9.97	34.91	26.864	124.4	0.00	9.82	1496.7	.582
151	8.83	34.66	26.888	124.9	0.00	8.67	1484.2	.718
151	8.32	34.62	26.927	122.5	0.00	8.26	1483.5	.841
151	6.80	34.50	27.053	111.8	0.00	6.72	1460.8	1.075
151	5.28	34.46	27.214	96.1	0.00	5.17	1467.9	1.283

STATION 2		42.515	151.29E	RAWRL 24/83		4500		
DATE= 22/02/84		TIME= 0626 LOCAL		DEPTH=		4500		
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. B
m	°C	PPT	CL/T	ML/L	°C	ML/L	ML/L	
0	18.290	35.380	25.959	203.6	0.00	18.29	1511.8	
25	18.290	35.370	25.964	203.7	0.00	18.29	1512.3	
50	18.040	35.370	26.024	199.0	0.00	18.03	1511.9	
75	15.750	35.370	26.090	183.4	0.00	15.74	1511.4	
100	13.300	35.340	26.196	145.8	0.00	13.29	1503.9	
140	12.900	35.300	26.646	142.3	0.00	12.86	1503.4	
196	12.610	35.200	26.704	138.0	0.00	12.58	1503.2	
270	11.410	35.100	26.779	132.3	0.00	11.38	1500.0	
452	8.240	34.610	26.832	119.4	0.00	8.19	1490.8	
652	6.450	34.490	27.082	105.4	0.00	6.39	1487.0	
852	5.050	34.370	27.329	83.3	0.00	4.96	1464.7	
1050	4.030	34.500	27.383	77.7	0.00	3.95	1463.7	
1251	3.423	34.550	27.466	66.3	0.00	3.33	1464.6	
1453	2.880	34.600	27.578	59.7	0.00	2.76	1465.6	
151	18.29	35.38	25.959	203.6	0.00	18.29	1511.8	0.000
151	18.29	35.37	25.962	203.6	0.00	18.29	1512.1	.020
151	18.29	35.37	25.964	203.7	0.00	18.29	1512.3	.051
151	18.04	35.37	26.024	199.0	0.00	18.03	1511.9	.101
151	15.75	35.37	26.090	183.4	0.00	15.74	1511.4	.150
151	13.30	35.34	26.196	145.8	0.00	13.29	1503.9	.183
151	12.90	35.30	26.647	142.2	0.00	12.86	1503.4	.295
151	12.58	35.29	26.706	137.8	0.00	12.55	1503.1	.335
151	11.75	35.18	26.759	133.8	0.00	11.71	1500.9	.403
151	10.78	34.99	26.804	130.1	0.00	10.75	1498.1	.468
151	9.00	34.71	26.888	123.0	0.00	8.93	1482.8	.595
151	7.77	34.56	26.963	116.7	0.00	7.72	1466.7	.715
151	6.88	34.50	27.043	109.8	0.00	6.82	1467.8	.827
151	5.36	34.56	27.264	87.5	0.00	5.21	1465.2	1.027
151	4.25	34.51	27.347	79.5	0.00	4.17	1463.8	1.192
151	3.28	34.56	27.509	66.1	0.00	3.19	1464.6	1.411

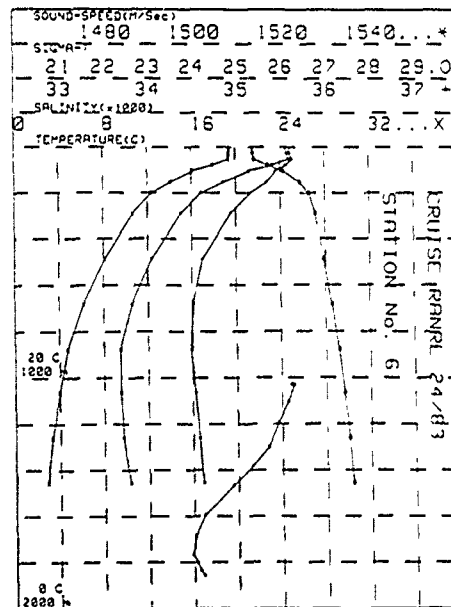
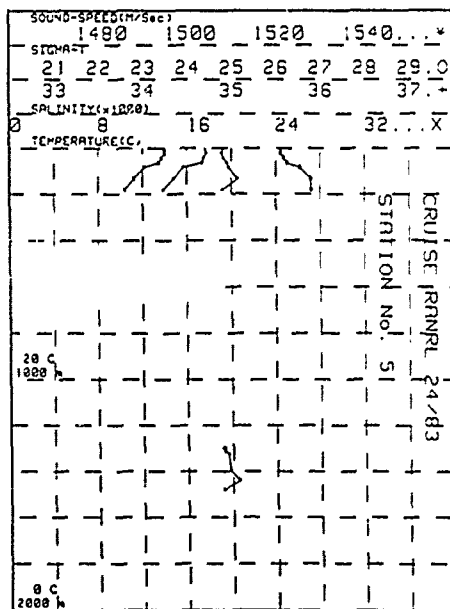
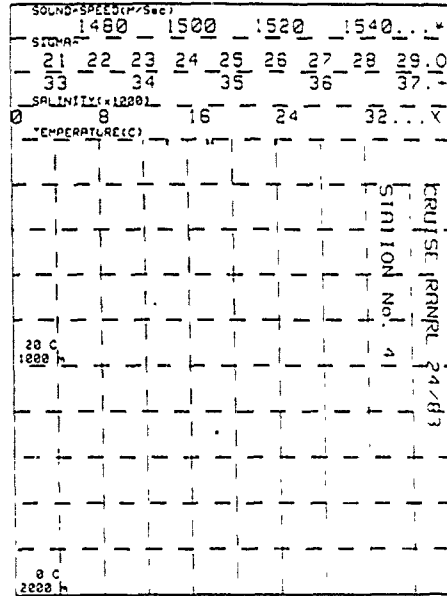
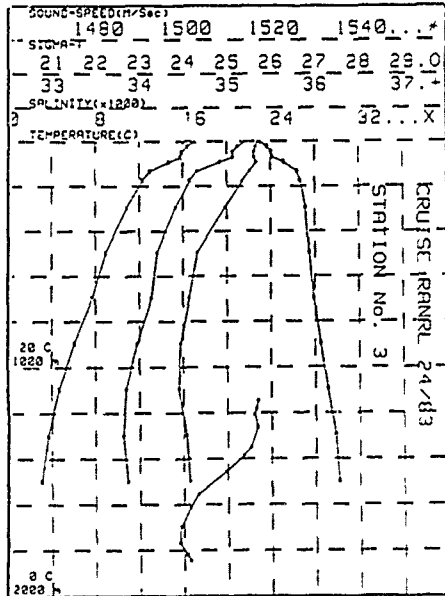
● BAD SALINITY VALUE

STATION 3 DATE= 22/02/84									
43.405 151.22E RAWRL 24/83 DEPTH= 4180									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	kg/m ³	°C	ML/L	°C	°C	M/Sec	
085	0	17.000	35.250	25.765	222.0	0.00	17.00	1514.2	0.000
085	23	18.240	35.330	25.919	208.1	0.00	18.24	1512.4	
086	48	15.900	35.310	26.010	200.2	0.00	15.90	1511.3	
085	70	15.780	35.310	26.037	196.3	0.00	15.77	1511.4	
085	92	14.740	35.340	26.292	174.7	0.00	14.73	1508.5	
085	133	12.870	35.290	26.601	146.2	0.00	12.85	1503.3	
085	173	12.300	35.180	26.872	140.4	0.00	12.28	1501.8	
086	294	10.870	34.680	26.784	132.0	0.00	10.83	1496.3	
085	498	8.910	34.650	26.687	126.8	0.00	8.86	1494.1	
086	694	7.720	34.570	26.878	118.7	0.00	7.66	1482.8	
086	896	6.080	34.470	27.124	105.0	0.00	6.00	1466.5	
085	1094	4.650	34.450	27.279	88.6	0.00	4.58	1467.0	
086	1296	3.650	34.530	27.448	72.8	0.00	3.55	1466.3	
085	1499	3.090	34.570	27.534	64.8	0.00	2.98	1487.4	
ISL	0	17.04	35.35	25.785	222.0	0.00	17.08	1514.2	0.000
ISL	10	16.74	35.34	25.840	215.2	0.00	16.73	1513.3	.022
ISL	25	16.31	35.33	25.930	207.1	0.00	16.30	1512.3	.054
ISL	50	15.88	35.31	26.014	198.8	0.00	15.87	1511.3	.104
ISL	75	15.54	35.32	26.101	192.4	0.00	15.53	1510.7	.154
ISL	100	14.31	35.32	26.271	187.3	0.00	14.28	1507.2	.199
ISL	150	12.67	35.23	26.639	143.5	0.00	12.65	1502.5	.278
ISL	200	11.96	35.13	26.701	138.2	0.00	11.84	1500.8	.348
ISL	250	11.37	35.05	26.749	134.6	0.00	11.34	1499.4	.414
ISL	300	10.80	34.97	26.786	131.9	0.00	10.78	1496.1	.481
ISL	400	9.75	34.78	26.824	126.8	0.00	9.70	1495.7	.612
ISL	500	8.89	34.66	26.886	126.8	0.00	8.84	1494.1	.740
ISL	600	8.36	34.61	26.919	123.4	0.00	8.29	1493.7	.864
ISL	800	6.85	34.51	27.052	111.8	0.00	6.77	1491.0	1.100
ISL	1000	5.27	34.48	27.204	97.0	0.00	5.19	1487.8	1.309
ISL	1300	3.63	34.53	27.430	72.7	0.00	3.54	1486.3	1.584

STATION 5 DATE= 23/02/84									
45.205 151.20E RAWRL 24/83 DEPTH= 4500									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	kg/m ³	°C	ML/L	°C	°C	M/Sec	
085	0	14.050	34.910	26.114	186.8	0.00	14.02	1504.1	0.000
086	21	14.000	34.890	26.103	190.5	0.00	14.00	1504.4	
086	42	13.720	34.910	26.177	184.0	0.00	13.71	1503.8	
085	63	13.490	34.950	26.255	177.2	0.00	13.48	1503.5	
085	84	12.310	34.970	26.545	150.0	0.00	12.10	1499.2	
086	123	11.210	35.070	26.782	127.6	0.00	11.19	1497.0	
086	181	10.420	34.900	26.802	127.6	0.00	10.40	1494.7	
ISL	0	14.02	34.91	26.114	186.8	0.00	14.02	1504.1	0.000
ISL	10	14.01	34.90	26.109	186.8	0.00	14.01	1504.4	.019
ISL	25	13.54	34.88	26.117	180.3	0.00	13.54	1504.3	.047
ISL	50	13.63	34.93	26.182	183.8	0.00	13.63	1503.7	.094
ISL	75	12.63	34.94	26.435	180.4	0.00	12.62	1500.8	.137
ISL	100	11.61	35.03	26.652	140.2	0.00	11.79	1496.5	.175
ISL	150	10.32	35.04	26.796	127.6	0.00	10.30	1496.2	.241

STATION 4 DATE= 23/02/84									
44.305 151.30E RAWRL 24/83 DEPTH= 4280									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	kg/m ³	°C	ML/L	°C	°C	M/Sec	
085	0	14.180	34.780	25.984	201.2	0.00	14.18	1504.4	
086	17	14.140	34.780	25.988	201.3	0.00	14.14	1504.8	
ISL	0	14.18	34.78	25.984	201.2	0.00	14.18	1504.4	0.000
ISL	10	14.15	34.78	25.987	201.2	0.00	14.15	1504.8	.020

STATION 6 DATE= 02/03/84									
39.225 149.14E RAWRL 24/83 DEPTH= 2562									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	kg/m ³	°C	ML/L	°C	°C	M/Sec	
085	0	19.610	35.610	25.383	258.3	0.00	19.41	1521.2	0.000
085	26	19.400	35.610	25.386	259.0	0.00	19.40	1521.8	.029
086	52	19.370	35.640	25.418	257.0	0.00	19.38	1522.0	.065
086	78	17.930	35.570	25.727	228.2	0.00	17.82	1518.3	.191
085	104	16.090	35.450	26.074	199.9	0.00	16.07	1513.0	.245
085	153	14.020	35.340	26.446	161.8	0.00	14.00	1507.2	.335
085	201	12.340	35.180	26.848	143.3	0.00	12.31	1502.1	.412
085	298	10.680	34.940	26.785	131.7	0.00	10.65	1497.5	.462
086	488	8.810	34.820	26.939	117.3	0.00	8.66	1490.9	.548
085	682	6.170	34.510	27.164	100.5	0.00	6.11	1486.4	.618
085	878	4.710	34.480	27.296	86.0	0.00	4.64	1483.6	.678
085	1064	3.980	34.530	27.414	75.0	0.00	3.90	1483.8	.796
086	1260	3.290	34.570	27.515	65.4	0.00	3.20	1484.2	.808
085	1458	2.680	34.610	27.587	58.8	0.00	2.78	1485.7	.827
ISL	0	19.41	35.61	25.383	258.3	0.00	19.41	1521.2	0.000
ISL	10	19.41	35.61	25.384	258.6	0.00	19.41	1521.4	.029
ISL	25	19.40	35.61	25.385	259.0	0.00	19.40	1521.8	.065
ISL	50	19.37	35.64	25.404	258.1	0.00	19.36	1522.0	.191
ISL	75	18.12	35.58	25.688	231.7	0.00	18.10	1518.0	.245
ISL	100	16.34	35.47	26.027	200.2	0.00	16.22	1513.8	.335
ISL	150	14.14	35.35	26.428	163.3	0.00	14.11	1507.5	.412
ISL	200	12.37	35.18	26.849	143.6	0.00	12.34	1502.2	.462
ISL	250	11.34	35.03	26.729	136.5	0.00	11.33	1499.5	.548
ISL	300	10.53	34.82	26.794	131.0	0.00	10.50	1497.1	.548
ISL	400	9.18	34.74	26.880	124.0	0.00	9.13	1493.6	.618
ISL	500	7.98	34.61	26.972	118.2	0.00	7.82	1490.5	.678
ISL	600	6.83	34.55	27.070	107.3	0.00	6.87	1488.1	.796
ISL	800	5.20	34.48	27.240	91.2	0.00	5.13	1484.3	.808
ISL	1000	4.22	34.51	27.377	78.6	0.00	4.14	1483.7	.827
ISL	1300	3.18	34.58	27.532	63.7	0.00	3.09	1484.4	1.488



Cruise TC 2

*Notes for cruise TC 2**Additional Nansen data for cruise TC 2*

Depth (m)	T	S	O ₂	
2467	1.96	-	-	Station 1
499	-	34.733	5.03	Station 3
3950	1.173	-	4.39	Station 4
1540	2.72	-	-	Station 7

The depths of 2967 to 4367 m for station 1 were extrapolated from a curve of wire length (L) and differences between thermometric depth (Z) and wire length (the L-Z curve). (The two deepest bottles were fouled by XBT wire.) Values used were the surface and for the 2067, 2267, 2467, and 2667 m accepted depths. Unlike many extrapolations, the shape of the L-Z curve was such that no error is expected in the extrapolated values.

Only the deep cast was made at station 1. The surface temperature value given was obtained by surface bucket and stem thermometer. The surface salinity is a dummy value used to get a program run.

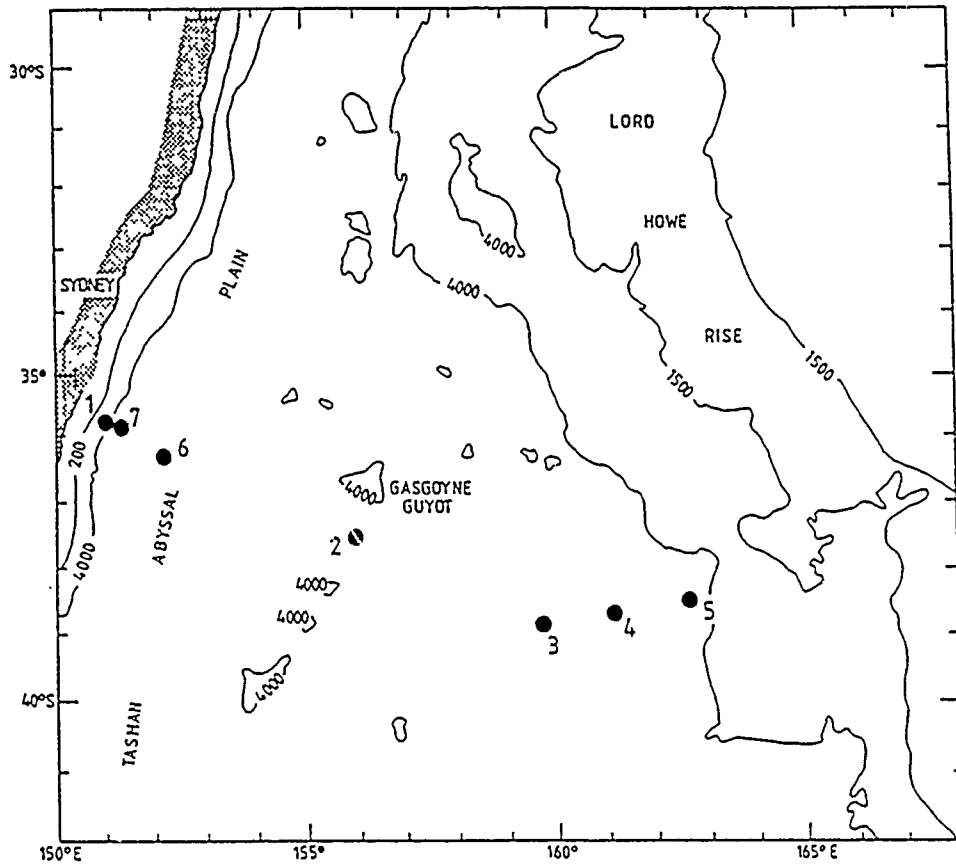


Figure 15. Nansen station positions for survey TC 2

Other sources of data for cruise TC 2

The cruise was a collaborative effort between SCRIPPS Institution of Oceanography, University of California, San Diego, the Australian National University (ANU), and RANRL involving several types of bottom moored instruments, hydrographic measurements, current meter and other data. Research papers continue to be published on the cruise data, so that the list below may not be complete.

Bindoff, N.L., Filloux, J.H., Mulhearn, P.J., Lilley, F.E.M. and Ferguson, I.J.
"Vertical Electric Field Fluctuations at the Floor of the Tasman Abyssal Plain".
Deep-Sea Research, 33, pp.587-600, 1986

Ferguson, I.J., Filloux, J.H., Lilley, F.E.M., Bindoff, N.L. and Mulhearn, P.J.
"A Seafloor Magnetotelluric Sounding in the Tasman Sea".
Geophysical Research Letters, 12, pp.554-8, 1985

Filloux, J.H., Lilley, F.E.M., Ferguson, I.J., Bindoff, N.L. and Mulhearn, P.J.
"The Tasman Project of Seafloor Magnetotelluric Exploration".
Exploration Geophysics, 16, pp.221-4, 1985

Lilley, F.E.M., Filloux, J.H., Bindoff, N.L., Ferguson, I.J. and Mulhearn, P.J.
"Barotropic Flow of a Warm-Core Ring from Seafloor Electric Measurements".
Journal of Geophysical Research, 91, pp.12779-12984, 1986

Lilley, F.E.M., Filloux, J.H., Ferguson, I.J., Bindoff, N.L. and Mulhearn, P.J. (1988)
"The Tasman Project of Seafloor Magnetotelluric Exploration: Experiment and Observation".
Physics of the Earth and Planetary Interiors, 53, 405-421

Lilley, F.E.M., Mulhearn, P.J., Filloux, J.H., Bindoff, N.L. and Ferguson, I.J.
"Pressure Fluctuations on the Open-Ocean Floor: Mid-Tasman Sea at (38°30'S, 162°38'E) Near the Lord Howe Rise".
Australian Journal of Marine and Freshwater Research, 37, pp.27-37, 1986

Mulhearn, P.J., Filloux, J.H., Lilley, F.E.M., Bindoff, N.L. and Ferguson, I.J.
"A Deep Boundary Current at the Foot of the New South Wales Continental Slope?".
RANRL Tech. Memo. 16/85

Mulhearn, P.J.
"A long-Period Record of Bottom Currents on the Tasman Abyssal Plain".
RANRL Tech. Memo 17/85

Mulhearn, P.J.
"A Deep Hydrographic Section across the Tasman Sea".
RANRL Tech. Memo 18/85

Mulhearn, P.J., Filloux, J.H., Lilley, F.E.M., Bindoff, N.L. and Ferguson, I.J.
"Abyssal Currents During the Formation and Passage of an East Australian Current Warm-Core Ring".
Deep-Sea Research, 33, pp.1563-1576, 1986

Mulhearn, P.J., Filloux, J.H., Lilley, F.E.M., Bindoff, N.L. and Ferguson, I.J. (1988)
"Comparisons Between Surface, Barotropic and Abyssal Flows During the Passage of a Warm-Core Ring".
Australian Journal Marine and Freshwater Research, Vol.39, pp.697-707

N.L. Bindoff and I.J. Ferguson both submitted Ph'D theses on the magneto-telluric measurements made on cruises TC 1 and TC 2.

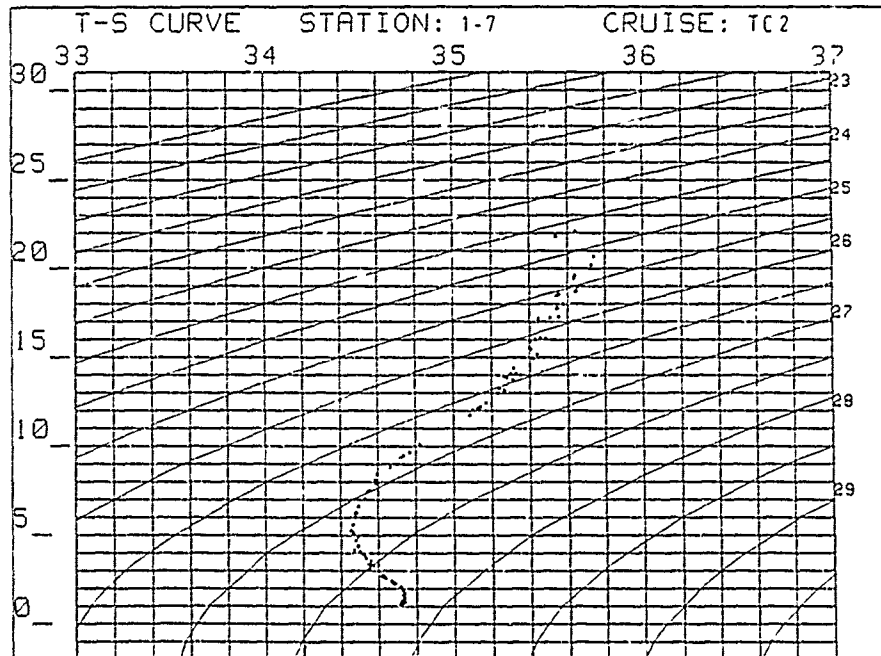
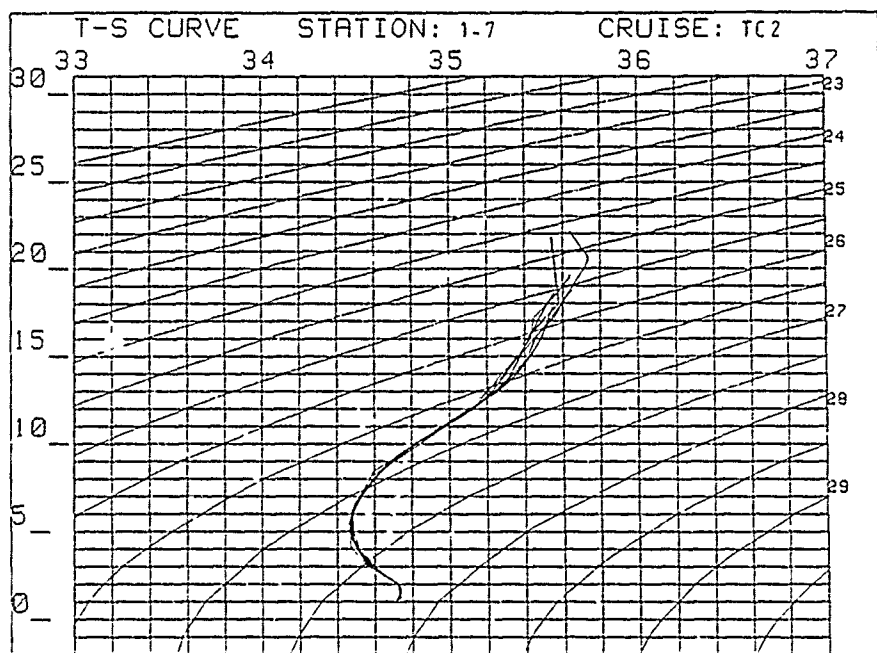


Figure 16. Temperature-salinity curves and scatter plot for cruise TC 2

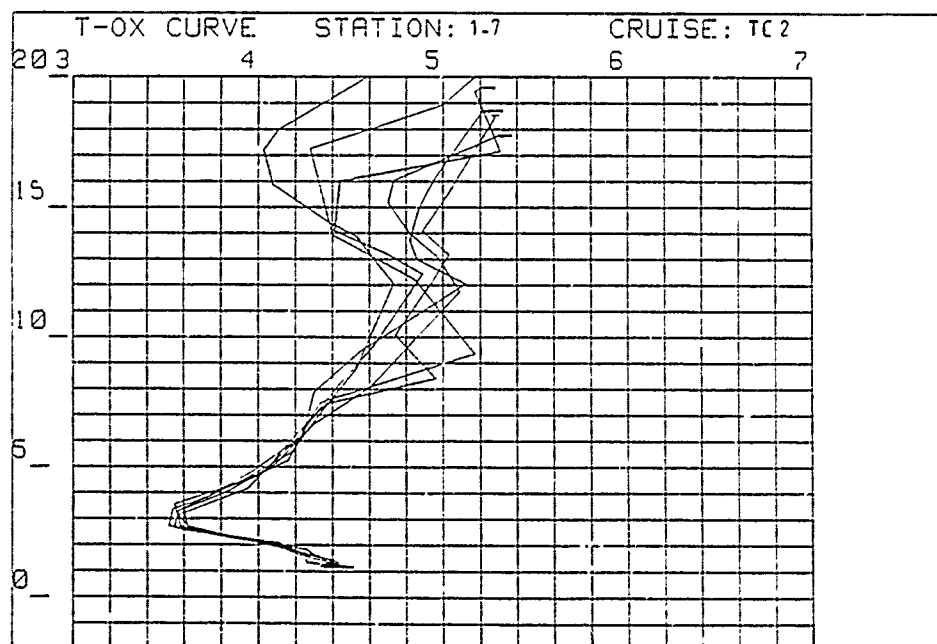
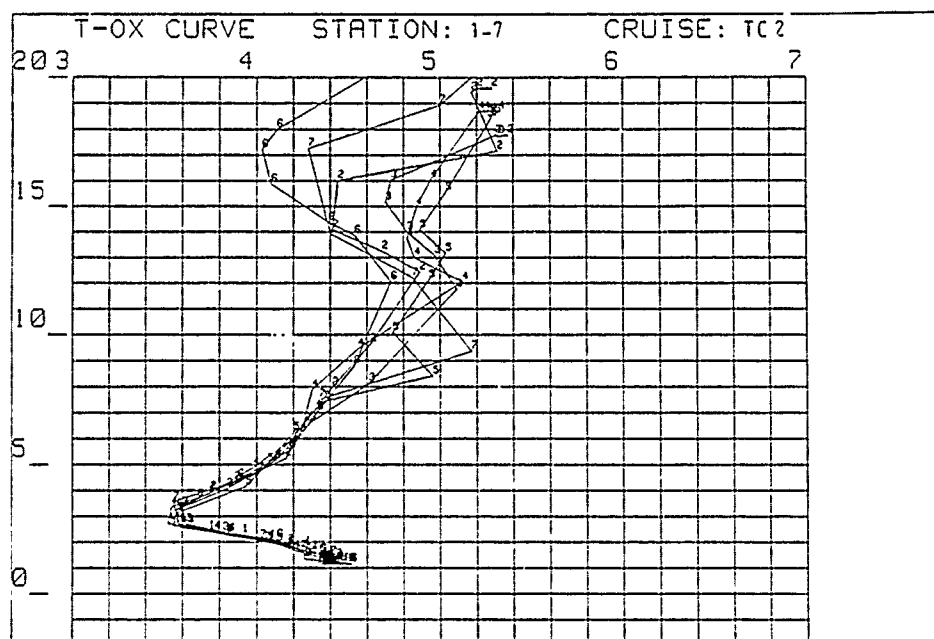


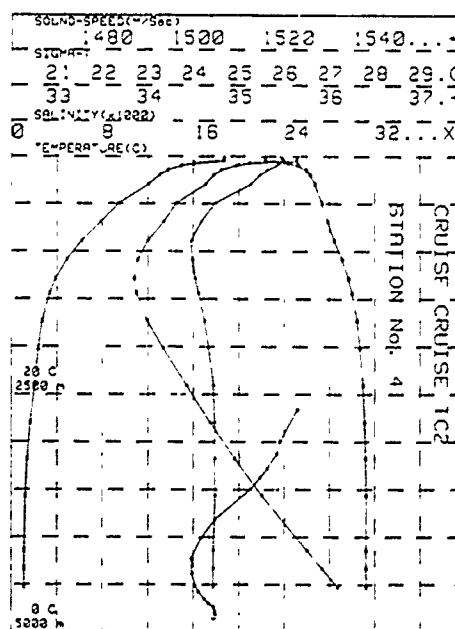
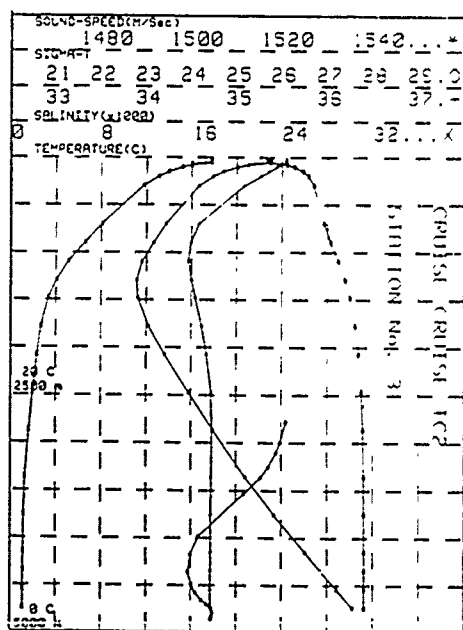
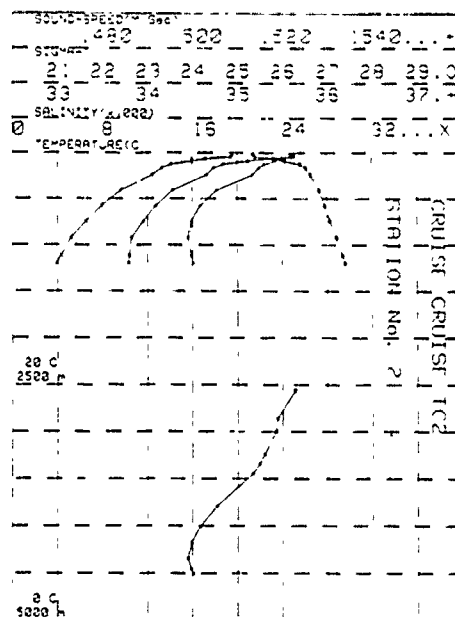
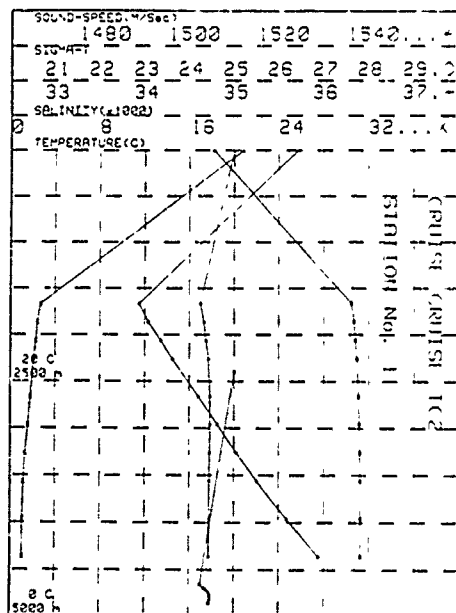
Figure 17. Temperature-oxygen curves for cruise TC 2

STATION 1									
DATE= 27/03/84									
TIME= 0225LOCAL									
CRUISE TC2									
DEPTH= 4850									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CE	POT,TEMP	S.S	Dym.e	
m	°C	Pps	CL/T	ML/L	°C	°C	H/Sec		
0	20.800	35.000	24.549	327.7	0.00	20.80	1524.3		
085	16.99	34.823	27.610	37.1	3.58	2.59	1460.7		
085	16.68	34.863	27.668	31.6	3.74	2.28	1490.8		
085	20.67	34.608	27.598	49.2	3.22	2.12	1493.6		
085	22.07	34.714	27.738	45.6	4.27	1.92	1496.2		
085	25.67	34.731	27.770	42.5	4.26	1.52	1502.0		
085	29.67	34.733	27.787	40.7	4.30	1.40	1506.3		
085	31.67	34.729	27.801	38.6	4.39	1.14	1510.5		
085	31.67	34.725	27.809	37.1	4.43	.95	1515.1		
085	31.67	34.723	27.813	36.9	4.49	.83	1521.8		
085	43.67	34.719	27.811	37.8	4.51	.77	1528.8		
ISL	2500	34.68	27.687	50.1	3.68	2.18	1492.7		
ISL	2500	34.73	27.758	43.7	4.20	1.75	1499.8		
ISL	3000	34.73	27.789	40.4	4.31	1.37	1506.4		
ISL	3500	34.73	27.804	37.4	4.42	.98	1514.0		
ISL	4000	34.72	27.813	36.9	4.49	.82	1522.2		

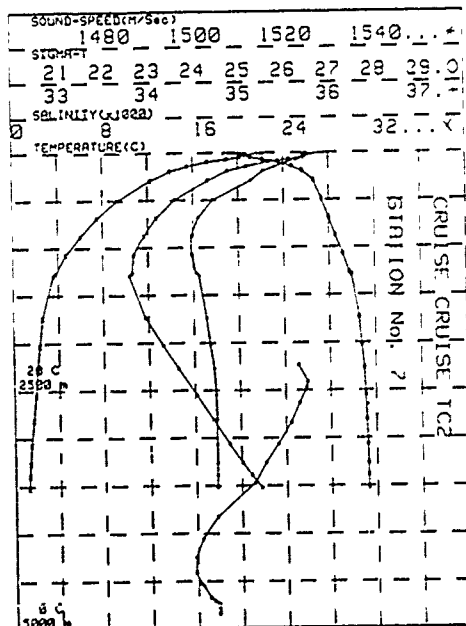
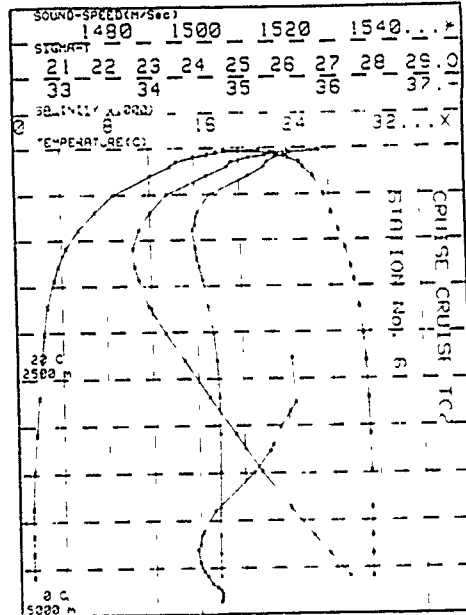
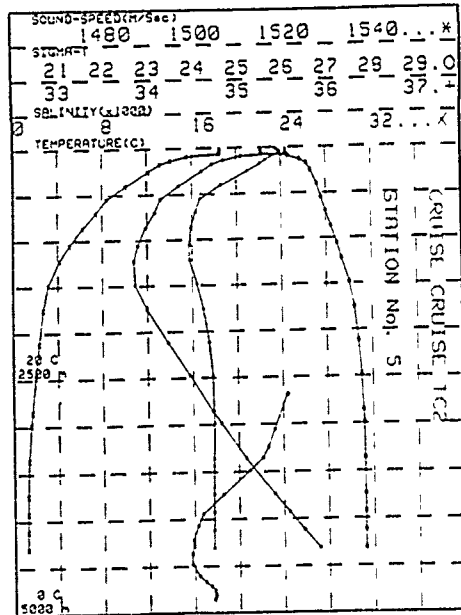
STATION 2									
DATE= 29/03/84									
TIME= 0900LOCAL									
CRUISE TC2									
DEPTH= 4500									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CE	POT,TEMP	S.S	Dym.e	
m	°C	Pps	CL/T	ML/L	°C	°C	H/Sec		
0	18.580	35.638	25.369	280.5	5.28	18.58	1521.7		
085	23	35.640	25.362	281.2	5.20	18.58	1522.1		
085	45	35.635	25.397	256.8	5.17	19.42	1522.0		
085	87	35.448	25.623	218.8	5.31	17.14	1515.4		
085	90	35.430	26.077	193.2	4.44	16.00	1512.5		
085	129	35.301	26.404	163.0	4.41	14.08	1508.9		
085	199	35.246	26.334	153.8	4.88	13.27	1504.7		
085	245	35.170	26.638	145.4	4.88	12.40	1503.2		
085	413	34.767	26.830	129.5	4.42	9.60	1495.8		
085	582	34.588	26.957	119.0	4.41	7.90	1481.8		
085	748	34.494	27.078	104.4	4.28	6.52	1480.1		
085	825	34.453	27.214	95.3	4.18	5.18	1480.8		
085	1116	34.490	27.348	82.8	3.88	4.24	1486.0		
085	1200	34.510	27.462	77.3	3.75	3.86	1485.9		
ISL	0	35.64	25.380	280.5	5.28	18.58	1521.7		
ISL	10	35.64	25.381	280.8	5.24	18.58	1521.9		
ISL	23	35.64	25.365	280.9	5.19	18.58	1522.1		
ISL	50	35.58	25.510	248.0	5.29	18.80	1520.3		
ISL	75	35.45	25.917	219.0	4.64	18.74	1516.8		
ISL	100	35.30	26.180	186.6	4.43	15.40	1510.8		
ISL	150	35.227	26.478	158.4	4.37	13.58	1505.7		
ISL	200	35.22	26.518	150.1	4.79	12.12	1504.2		
ISL	250	35.15	26.645	144.8	4.88	12.30	1502.9		
ISL	300	35.01	26.708	124.8	4.79	11.58	1500.3		
ISL	400	34.78	26.817	120.3	4.64	9.78	1498.0		
ISL	500	34.68	26.898	124.1	4.50	8.88	1493.5		
ISL	600	34.58	26.949	117.9	4.39	7.75	1491.5		
ISL	800	34.47	27.118	104.4	4.25	6.07	1488.1		
ISL	1000	34.47	27.266	90.4	4.05	4.79	1486.3		

STATION 3									
DATE= 30/03/84									
TIME= 0900LOCAL									
CRUISE TC2									
DEPTH= 4840									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CE	POT,TEMP	S.S	Dym.e	
m	°C	Pps	CL/T	ML/L	°C	°C	H/Sec		
0	17.770	35.548	25.750	223.5	5.37	17.77	1518.5		
085	25	35.517	25.758	223.7	5.32	17.74	1518.8		
085	50	35.548	25.751	225.0	5.30	17.75	1517.3		
085	75	35.487	26.118	191.0	4.73	16.02	1512.4		
085	100	35.441	26.275	176.3	4.70	15.15	1510.1		
085	150	35.332	26.482	160.0	4.82	13.97	1507.0		
085	200	35.265	26.583	149.7	4.87	13.05	1504.7		
085	300	35.082	26.701	140.5	5.09	11.71	1501.8		
085	400	34.943	26.829	123.6	4.81	8.05	1494.3		
085	495	34.845	27.074	110.7	4.29	6.52	1491.6		
085	1094	34.488	27.235	95.0	4.10	5.08	1489.0		
085	1293	34.502	27.383	80.2	3.85	3.87	1487.9		
085	1480	34.545	27.488	68.6	3.60	3.25	1488.1		
085	1778	34.615	27.604	58.3	3.42	2.58	1490.5		
085	2075	34.692	27.679	51.5	3.82	2.22	1494.2		
085	2470	34.723	27.749	44.9	4.05	1.83	1499.4		
085	2863	34.735	27.783	41.2	4.25	1.48	1504.9		
085	3358	34.728	27.803	38.2	4.28	1.09	1511.9		
085	3754	34.721	27.806	37.8	4.43	.83	1516.4		
085	4149	34.719	27.808	38.1	4.38	.84	1521.1		
085	4347	34.717	27.808	38.2	4.48	.79	1528.5		
085	4544	34.718	27.807	38.8	4.79	.77	1532.0		
085	4742	34.719	27.809	38.6	4.38	.72	1535.5		
ISL	0	35.55	25.750	223.5	5.37	17.77	1518.5		
ISL	10	35.55	25.754	223.8	5.35	17.75	1519.6		
ISL	25	35.55	25.758	223.7	5.32	17.74	1518.8		
ISL	50	35.55	25.751	225.0	5.30	17.75	1517.3		
ISL	75	35.48	26.118	191.0	4.73	16.02	1512.4		
ISL	100	35.44	26.275	176.3	4.70	15.15	1510.1		
ISL	150	35.33	26.482	160.0	4.82	13.97	1507.0		
ISL	200	35.27	26.583	149.7	4.87	13.05	1504.7		
ISL	250	35.17	26.645	144.8	5.04	12.36	1503.1		
ISL	300	35.08	26.701	140.5	5.09	11.71	1501.8		
ISL	400	34.94	26.829	123.6	4.81	8.05	1494.3		
ISL	500	34.78	26.844	123.7	4.88	9.77	1497.7		
ISL	600	34.67	26.864	129.1	4.75	8.86	1495.9		
ISL	800	34.53	27.052	117.3	4.43	7.25	1492.9		
ISL	1000	34.47	27.160	102.3	4.20	5.70	1490.1		
ISL	1300	34.40	27.287	79.8	3.83	3.94	1487.9		
ISL	1500	34.31	27.487	68.7	3.80	3.18	1486.3		
ISL	2000	34.68	27.642	53.1	3.77	2.30	1493.2		
ISL	2500	34.72	27.732	44.8	4.07	1.80	1499.8		
ISL	3000	34.73	27.791	40.1	4.25	1.35	1506.7		
ISL	3500	34.72	27.805	38.0	4.35	1.02	1514.2		
ISL	4000	34.72	27.807	38.5	4.79	.87	1522.9		
ISL	4500	34.72	27.808	38.5	4.40	.77	1531.3		

STATION 4									
DATE= 30/03/84									
TIME= 1915LOCAL									
CRUISE TC2									
DEPTH= 4720									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CE	POT,TEMP	S.S	Dym.e	
m	°C	Pps	CL/T	ML/L	°C	°C	H/Sec		



STATION 5 DATE= 03/03/84										STATION 6 DATE= 03/04/84									
30.225			102.225			CRUISE TC2				34.155			152.126			CRUISE TC2			
TIME= 1105LOCAL			TIME= 1105LOCAL			DEPTH= 4800				TIME= 0715LOCAL			DEPTH= 4830			TIME= 0715LOCAL			
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	M/L	POT. TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	M/L	POT. TEMP	S.S		
m	°C	Ppt	kg/m ³	°C	°C	°C	°C	g/kg	m	°C	Ppt	kg/m ³	°C	°C	°C	°C	g/kg		
000	18.550	35.554	25.560	241.5	5.30	18.55	1518.7		000	21.630	35.540	24.677	325.5	5.11	21.63	1527.8	0.000		
005	18.540	35.554	25.563	242.0	5.27	18.54	1519.1		005	21.610	35.544	24.684	325.8	5.02	21.61	1528.0	0.033		
010	18.560	35.553	25.557	243.4	5.28	18.55	1519.5		010	50.17990	35.578	25.710	228.1	4.11	17.98	1518.0	0.061		
015	18.480	35.542	25.574	242.5	5.28	18.48	1518.6		015	17.210	35.511	25.857	215.7	4.03	17.21	1518.0	0.151		
020	15.540	35.596	26.159	187.3	5.03	15.53	1511.1		020	15.670	35.401	26.087	194.6	4.08	15.65	1512.3	0.208		
025	15.180	35.528	26.424	183.2	4.89	15.18	1507.0		025	14.370	35.315	26.353	170.6	4.39	14.35	1508.3	0.254		
030	15.180	35.548	26.588	150.4	5.03	15.14	1504.6		030	12.600	35.283	26.436	163.9	4.53	12.63	1507.4	0.298		
035	12.120	35.120	26.645	143.0	4.94	12.09	1502.2		035	12.050	35.101	26.859	144.7	4.73	12.01	1502.7	0.343		
040	10.080	34.823	26.800	132.4	4.74	10.03	1497.1		040	8.810	34.645	26.868	123.1	4.53	8.78	1493.3	0.388		
045	8.410	34.558	26.895	124.8	4.96	8.35	1493.0		045	6.660	34.529	27.044	111.4	4.33	6.68	1490.0	0.433		
050	7.450	34.541	26.994	115.7	4.37	7.38	1491.6		050	5.160	34.465	27.185	96.3	4.18	5.48	1487.4	0.478		
055	6.240	34.486	27.116	105.7	4.20	6.18	1489.7		055	4.420	34.490	27.336	83.7	3.90	4.33	1486.0	0.523		
060	5.040	34.470	27.231	92.6	4.08	4.95	1486.0		060	3.680	34.534	27.448	73.0	3.58	3.58	1486.3	0.568		
065	4.150	34.470	27.346	83.0	3.94	4.05	1487.0		065	3.290	34.513	27.517	64.4	3.57	3.18	1487.2	0.613		
070	3.140	34.552	27.515	68.4	3.57	3.03	1487.3		070	2.640	34.627	27.620	56.3	3.55	2.52	1489.3	0.658		
075	2.450	34.623	27.616	58.3	3.63	2.52	1489.9		075	2.018	34.682	27.691	49.8	3.65	2.17	1493.0	0.703		
080	2.120	34.685	27.697	49.5	3.84	2.12	1484.5		080	2.090	34.715	27.736	43.6	4.11	1.92	1487.0	0.748		
085	2.018	34.723	27.754	44.1	4.11	1.77	1496.3		085	2.000	34.735	27.774	42.2	4.17	1.81	1500.5	0.793		
090	1.854	34.729	27.785	40.5	4.28	1.40	1504.3		090	2.000	34.730	27.795	36.7	4.34	1.30	1505.1	0.838		
095	1.510	34.736	27.798	38.0	4.35	1.29	1506.2		095	2.000	34.730	27.810	37.4	4.36	1.01	1513.8	0.883		
100	1.273	34.725	27.806	37.4	4.37	1.02	1511.7		095	2.000	34.723	27.812	37.0	4.50	0.86	1520.1	0.928		
105	1.175	34.721	27.809	37.1	4.45	0.99	1517.9		100	1.157	34.721	27.811	37.7	4.51	0.82	1525.2	0.973		
110	1.148	34.725	27.817	37.2	4.48	0.86	1521.2		105	1.100	34.721	27.810	36.1	4.40	0.80	1528.0	1.018		
115	1.148	34.719	27.810	37.6	4.40	0.82	1524.5		110	1.100	34.721	27.810	36.1	4.40	0.80	1528.0	1.063		
120	1.144	34.718	27.809	38.0	4.34	0.79	1527.8		115	1.100	34.721	27.810	36.1	4.40	0.80	1528.0	1.108		
125	18.55	35.55	25.560	241.5	5.30	18.55	1518.7	0.000	120	21.630	35.540	24.677	325.5	5.11	21.63	1527.8	0.000		
130	18.54	35.55	25.562	241.6	5.28	18.54	1518.9	0.024	125	21.610	35.544	24.684	325.8	5.02	21.61	1528.0	0.033		
135	18.55	35.55	25.561	242.2	5.27	18.54	1519.1	0.080	130	17.990	35.556	25.710	228.1	4.11	17.98	1518.0	0.061		
140	18.54	35.55	25.560	242.2	5.28	18.53	1519.3	0.121	135	17.210	35.511	25.857	215.7	4.03	17.21	1518.0	0.151		
145	17.17	35.793	26.181	231.8	4.18	17.16	1518.4	0.161	140	15.670	35.401	26.087	194.6	4.08	15.65	1512.3	0.208		
150	15.17	35.34	26.230	180.9	4.97	15.15	1510.0	0.231	145	14.370	35.315	26.353	170.6	4.39	14.35	1508.3	0.254		
155	13.86	35.31	26.489	157.5	4.96	13.87	1506.0	0.315	150	12.600	35.283	26.436	163.9	4.53	12.63	1507.4	0.298		
160	12.94	35.23	26.600	148.0	5.00	12.81	1503.9	0.391	155	12.050	35.101	26.859	144.7	4.73	12.01	1502.7	0.343		
165	12.18	35.14	26.656	143.4	4.85	12.15	1502.4	0.466	160	12.000	35.099	26.859	144.7	4.73	12.01	1502.7	0.388		
170	11.47	35.02	26.710	138.5	4.86	11.43	1500.6	0.535	165	10.226	34.645	26.879	124.4	4.63	10.24	1497.7	0.578		
175	10.14	34.63	26.797	132.7	4.75	10.09	1497.3	0.671	170	8.844	34.567	26.884	123.3	4.53	8.78	1493.3	0.613		
180	8.92	34.68	26.841	127.5	4.88	8.86	1494.2	0.801	175	6.660	34.549	26.947	118.2	4.42	6.62	1491.1	0.658		
185	8.11	34.58	26.916	122.4	4.72	8.05	1492.7	0.920	180	5.160	34.465	27.185	96.3	4.18	5.48	1487.4	0.703		
190	6.71	34.50	27.067	110.2	4.26	6.63	1490.4	1.159	185	4.420	34.490	27.336	83.7	3.90	4.33	1486.0	0.748		
195	5.38	34.47	27.213	96.5	4.10	5.29	1488.4	1.346	190	3.680	34.534	27.448	73.0	3.58	3.58	1486.3	0.793		
200	3.80	34.50	27.405	77.3	3.79	3.70	1487.1	1.627	195	3.290	34.513	27.517	64.4	3.57	3.18	1487.2	0.838		
205	3.11	34.58	27.521	65.9	3.57	3.00	1487.4	1.771	200	2.640	34.627	27.620	56.3	3.55	2.52	1489.3	0.883		
210	2.39	34.67	27.673	51.7	3.76	2.24	1483.0	2.041	205	2.090	34.735	27.736	43.6	4.11	1.92	1487.0	0.928		
215	2.000	34.723	27.755	43.9	4.12	1.75	1495.8	2.299	210	2.000	34.730	27.795	36.7	4.34	1.30	1505.1	0.973		
220	1.800	34.740	27.788	36.9	4.3	1.28	1506.4	2.507	215	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.018		
225	1.600	34.757	27.805	34.2	4.41	0.94	1507.9	2.715	220	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.063		
230	1.400	34.774	27.822	31.5	4.52	0.69	1509.4	2.923	225	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.108		
235	1.200	34.791	27.839	28.8	4.63	0.44	1510.9	3.131	230	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.153		
240	1.000	34.808	27.856	26.1	4.74	0.19	1512.4	3.339	235	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.198		
245	0.800	34.825	27.873	23.4	4.85	0.04	1513.9	3.547	240	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.243		
250	0.600	34.842	27.890	20.7	4.96	0.04	1515.4	3.755	245	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.288		
255	0.400	34.859	27.907	18.0	5.07	0.04	1516.9	3.963	250	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.333		
260	0.200	34.876	27.924	15.3	5.18	0.04	1518.4	4.171	255	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.378		
265	0.000	34.893	27.941	12.6	5.29	0.04	1519.9	4.379	260	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.423		
270	0.000	34.910	27.958	9.9	5.40	0.04	1521.4	4.587	265	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.468		
275	0.000	34.927	27.975	7.2	5.51	0.04	1522.9	4.795	270	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.513		
280	0.000	34.944	27.992	4.5	5.62	0.04	1524.4	5.003	275	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.558		
285	0.000	34.961	28.009	1.8	5.73	0.04	1525.9	5.211	280	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.603		
290	0.000	34.978	28.026	-0.9	5.84	0.04	1527.4	5.419	285	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.648		
295	0.000	34.995	28.043	-3.6	5.95	0.04	1528.9	5.627	290	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.693		
300	0.000	35.012	28.060	-6.3	6.06	0.04	1530.4	5.835	295	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.738		
305	0.000	35.029	28.077	-9.0	6.17	0.04	1531.9	6.043	300	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.783		
310	0.000	35.046	28.094	-11.7	6.28	0.04	1533.4	6.251	305	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.828		
315	0.000	35.063	28.111	-14.4	6.39	0.04	1534.9	6.459	310	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.873		
320	0.000	35.080	28.128	-17.1	6.50	0.04	1536.4	6.667	315	2.000	34.730	27.810	37.4	4.36	1.30	1505.1	1.918		
325	0.000	35.097	28																



Cruise RANRL 11/85

Notes for cruise RANRL 11/85

Six Nansen stations were occupied at one site, and three at another, all nominally to 200 m, to obtain an indirect guide to calibration for the CTD profiler on HMAS Cook. The CTD was yo-yoed continuously for several days at each site when the gear brought for this purpose was damaged after being towed while still outboard.

The winch digital depth readout was found to be erratic at stations 2 and 3 during onboard processing of reversing thermometer data, leading to several unknown depths at these stations. It is possible that good depths could be assigned to these values by comparisons against XBT and CTD profiles made before and after the Nansen stations. (These data are unavailable to the author at present.) The values with unknown depths are given below, with the likely depths also.

Estimated depth	Actual depth	T	S	
35	?	29.44	34.482	Station 2
45	?	28.82	34.446	
55	?	27.24	34.464	
75	?	24.27	34.783	
10	?	29.55	34.512	Station 3
20	?	29.42	34.499	
30	?	28.98	34.640	
40	?	28.14	34.540	
95	?	24.21	34.866	
165	?	19.94	35.006	
117 ± 2 *	?	22.12	34.881	Station 4

* This may be a pretrip value

Other sources of data for cruise RANRL 11/85

Pellegrini, J.J., and Penrose, J.D. (1986)

"Comparison of Ship-based and Satellite AVHRR Estimates of Sea Surface Temperature".

Proceedings 1st Australian AVHRR Conference. 22 to 24 October 1986, Perth, Western Australia

Scott, B.D. (1986)

"RAN Research Laboratory Oceanographic Cruise Report for RANRL 11/85".

(Unpublished document). A narrative of the actual cruise.

Optical, nutrient, and phytoplankton pigment measurements were taken by a Danish group from the Institute of Physical Oceanography, University of Copenhagen, but results are unknown. N. Hojerslev was the leader of the Danish team.

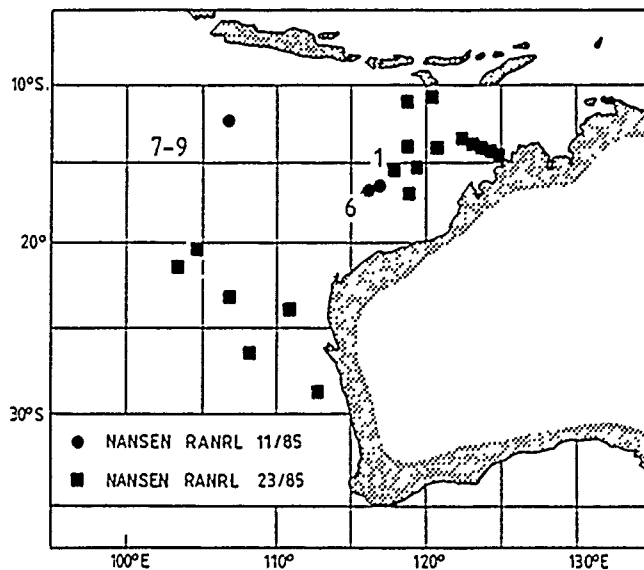


Figure 18. Nansen station positions for survey RANRL 11/85 (Nansen station positions for survey RANRL 23/83 are also shown)

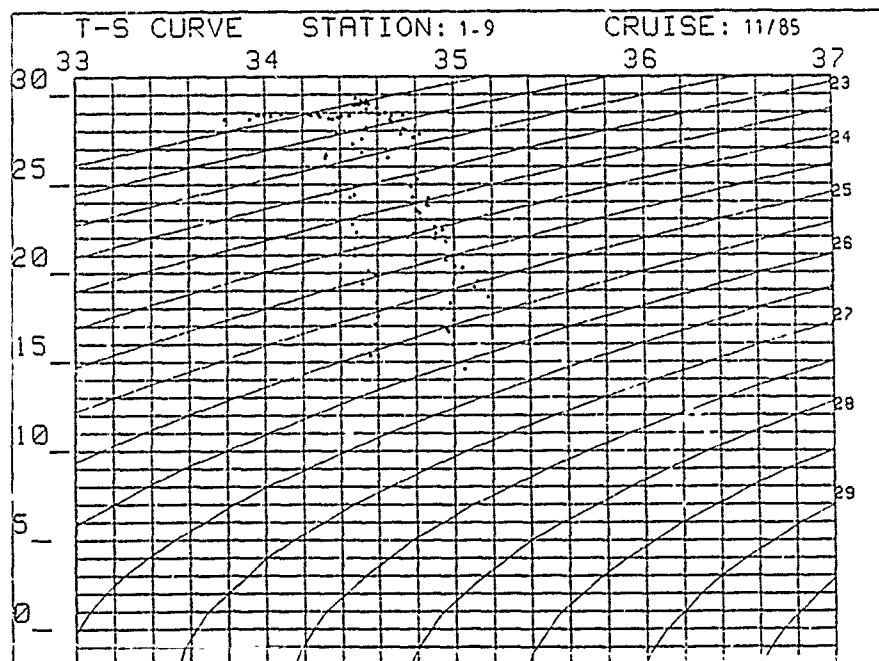
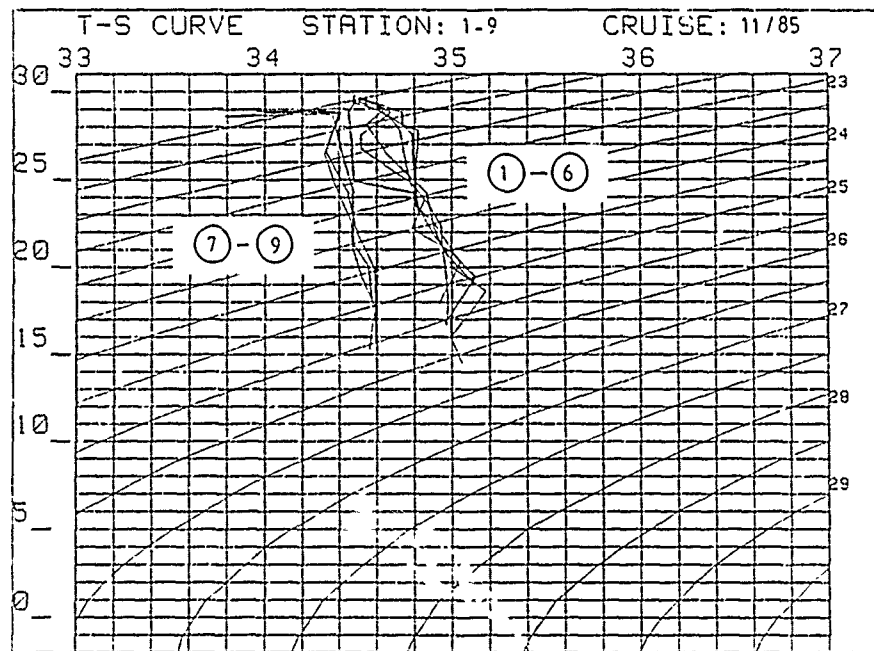
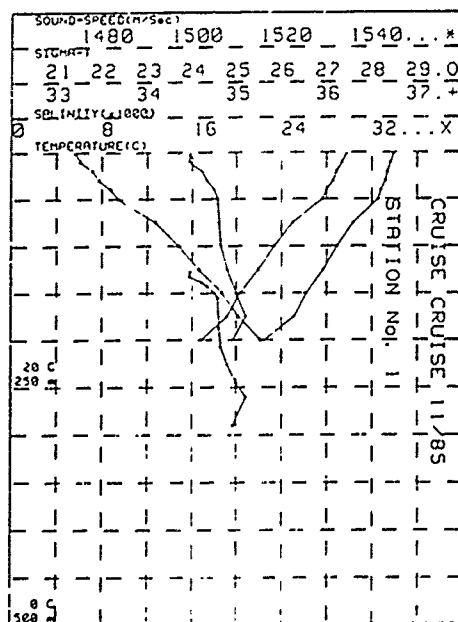


Figure 19. Temperature-salinity curves and scatter plot for RANRL 11/85

STATION 1		15.145	118.42E	CRUISE 11/85					
DATE= 26/03/85		TIME= 0550GMT		DEPTH= 5600					
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	W.S	Dym
m	°C	Pct	kg/m ³	CL/T	ML/L	°C	M/Sec		
OBS 0	29.790	34.479	21.410	637.7	0.00	29.79	1544.8		
OBS 10	29.400	34.488	21.534	628.2	0.00	29.40	1544.2		
OBS 20	28.910	34.613	21.806	600.6	0.00	28.91	1543.5		
OBS 30	28.600	34.645	21.948	587.4	0.00	28.59	1543.0		
OBS 40	28.010	34.748	22.224	563.2	0.00	28.00	1542.0		
OBS 50	27.810	34.787	22.353	548.4	0.00	27.80	1541.4		
OBS 75	25.010	34.802	23.190	470.2	0.00	24.99	1535.9		
OBS 100	23.240	34.833	23.997	422.7	0.00	23.24	1532.3		
OBS 125	21.830	34.900	24.163	379.1	0.00	21.81	1528.2		
OBS 150	20.340	35.004	24.678	330.9	0.00	20.31	1523.3		
OBS 175	19.170	35.108	25.081	294.8	0.00	19.14	1522.8		
OBS 200	18.810	34.944	25.533	250.4	0.00	18.78	1518.2		
ISL 0	29.79	34.48	21.410	637.7	0.00	29.79	1544.8	0.000	
ISL 10	29.40	34.47	21.534	628.2	0.00	29.40	1544.2	0.003	
ISL 25	28.79	34.64	21.963	599.3	0.00	28.78	1543.3	0.154	
ISL 50	27.81	34.79	22.353	548.4	0.00	27.80	1541.4	0.297	
ISL 75	25.01	34.80	23.190	470.2	0.00	24.99	1535.9	0.424	
ISL 100	23.24	34.82	23.997	422.7	0.00	23.24	1532.3	0.536	
ISL 150	20.34	35.00	24.678	330.9	0.00	20.31	1523.3	0.729	
ISL 200	18.81	34.94	25.533	250.4	0.00	18.78	1518.2	0.871	

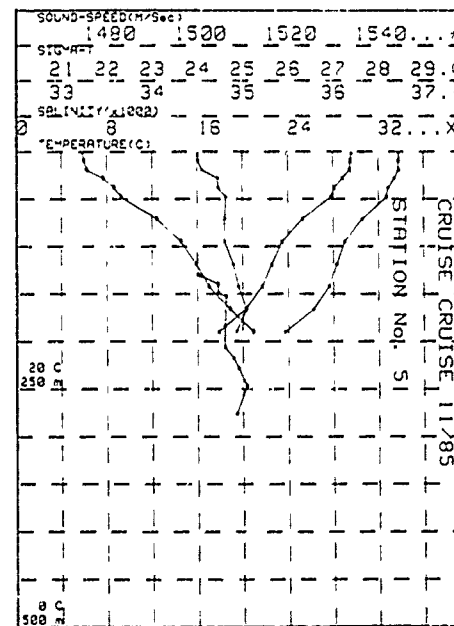
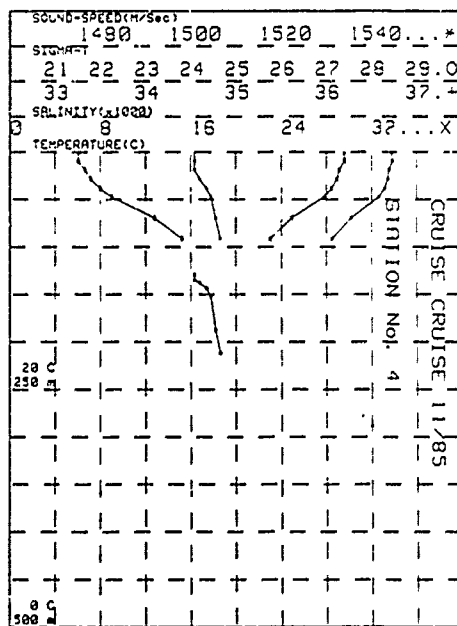
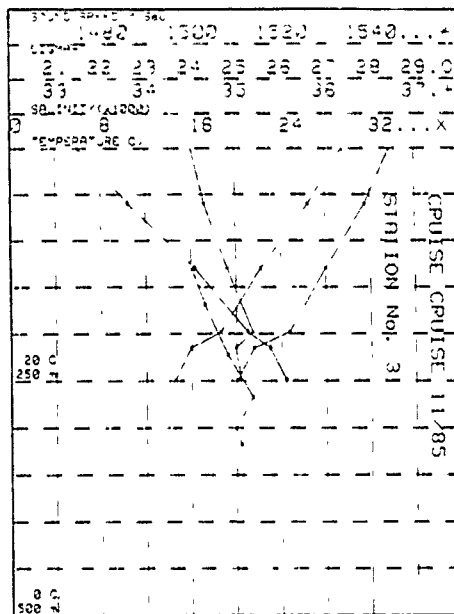
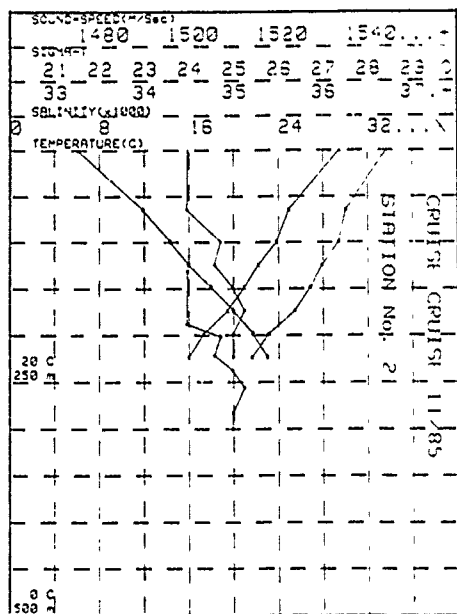


STATION 2		15.185		116.47E		CRUISE 11/85		DEPTH= 5480	
DATE= 29/03/85		TIME= 14200HT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	M/Sec	L		
OBS 0	29.470	34.486	21.523	828.8	0.00	29.47	1544.2		
OBS 65	28.810	34.478	22.874	490.4	0.00	24.90	1535.1		
OBS 100	23.620	34.854	23.546	433.4	0.00	23.80	1535.5		
OBS 135	22.210	34.787	23.998	394.8	0.00	22.18	1529.8		
OBS 149	20.950	34.849	24.500	347.7	0.00	20.92	1527.1		
OBS 174	19.480	35.132	24.997	301.0	0.00	19.43	1523.8		
OBS 199	17.220	34.998	25.458	259.7	0.00	17.28	1517.8		
OBS 224	15.890	34.955	25.748	230.3	0.00	15.94	1514.1		
ISL 0	29.47	34.49	21.523	828.8	0.00	29.47	1544.2	0.000	
ISL 10	28.55	34.48	21.773	603.3	0.00	28.55	1542.3	.062	
ISL 25	27.33	34.48	22.130	599.7	0.00	27.32	1539.9	.150	
ISL 50	25.87	34.46	22.878	518.4	0.00	25.86	1536.5	.287	
ISL 75	24.74	34.44	23.153	473.8	0.00	24.72	1535.1	.411	
ISL 100	23.62	34.85	23.546	433.4	0.00	23.60	1535.5	.525	
ISL 150	20.90	35.00	24.521	345.7	0.00	20.87	1527.0	.721	
ISL 200	17.25	35.00	25.451	258.3	0.00	17.22	1517.6	.871	

STATION 3		15.288		116.35E		CRUISE 11/85		DEPTH= 5475	
DATE= 30/03/85		TIME= 14350HT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	M/Sec	Oym.m		
OBS 0	29.540	34.513	21.520	827.2	0.00	29.54	1544.4		
OBS 80	28.480	34.654	22.824	523.8	0.00	28.47	1538.9		
OBS 130	22.700	34.905	24.091	388.1	0.00	22.17	1530.0		
OBS 198	18.630	35.180	25.154	277.3	0.00	18.58	1521.8		
OBS 213	15.980	34.982	25.751	229.8	0.00	15.93	1513.9		
OBS 249	14.580	35.052	26.104	196.8	0.00	14.54	1510.2		
ISL 0	29.54	34.51	21.520	827.2	0.00	29.54	1544.4	0.000	
ISL 10	28.07	34.53	21.684	610.8	0.00	28.07	1543.8	.062	
ISL 25	28.23	34.56	21.943	585.8	0.00	28.23	1542.3	.151	
ISL 50	27.03	34.83	22.430	542.0	0.00	27.02	1539.9	.282	
ISL 75	25.51	34.71	22.961	482.1	0.00	25.49	1536.9	.422	
ISL 100	23.88	34.79	23.498	442.0	0.00	23.84	1533.7	.538	
ISL 150	21.15	35.18	24.296	387.8	0.00	21.12	1527.8	.738	
ISL 200	18.25	35.15	25.323	270.8	0.00	18.21	1520.8	.895	

STATION 4		15.313		116.24E		CRUISE 11/85		DEPTH= 5472	
DATE= 31/03/85		TIME= 14150HT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	M/Sec	Oym.m		
OBS 0	29.810	34.542	21.518	827.4	0.00	29.81	1544.3		
OBS 10	29.810	34.542	21.518	827.8	0.00	29.81	1544.7		
OBS 18	28.170	34.538	21.643	614.2	0.00	28.17	1543.8		
OBS 28	28.820	34.599	21.782	602.3	0.00	28.81	1543.8		
OBS 38	28.440	34.875	22.002	582.6	0.00	28.45	1542.9		
OBS 48	27.780	34.723	22.237	558.5	0.00	27.78	1541.8		
OBS 70	24.820	34.775	23.187	489.4	0.00	24.80	1535.5		
OBS 92	23.000	34.827	23.804	412.2	0.00	22.94	1531.3		
ISL 0	29.81	34.54	21.518	827.4	0.00	29.81	1544.3	0.000	
ISL 10	29.51	34.54	21.518	827.8	0.00	29.51	1544.7	.063	
ISL 25	29.05	34.57	21.731	807.9	0.00	29.04	1543.8	.155	
ISL 50	27.49	34.73	22.358	549.1	0.00	27.48	1541.0	.301	
ISL 75	24.40	34.78	23.364	453.8	0.00	24.38	1534.4	.428	

STATION 5		15.348		116.11E		CRUISE 11/85		DEPTH= 5473	
DATE= 01/04/85		TIME= 07300HT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	M/Sec	Oym.m		
OBS 0	29.850	34.508	21.479	831.1	0.00	29.85	1544.8		
OBS 9	29.590	34.510	21.514	828.1	0.00	29.59	1544.3		
OBS 18	28.470	34.552	21.572	622.8	0.00	28.47	1544.6		
OBS 28	28.830	34.733	21.823	589.7	0.00	28.82	1543.8		
OBS 38	28.080	34.734	22.172	566.2	0.00	28.07	1542.1		
OBS 48	27.790	34.821	22.531	551.5	0.00	27.78	1541.8		
OBS 71	25.280	34.807	23.112	477.8	0.00	25.28	1538.4		
OBS 95	23.490	34.807	23.647	427.3	0.00	23.47	1532.5		
OBS 119	22.570	34.900	23.982	396.1	0.00	22.55	1530.7		
OBS 142	21.740	34.958	24.258	370.8	0.00	21.71	1529.0		
OBS 168	20.750	35.045	24.729	328.4	0.00	20.73	1525.6		
OBS 190	17.820	34.831	25.240	278.1	0.00	17.88	1518.3		
ISL 0	29.85	34.51	21.479	831.1	0.00	29.85	1544.8	0.000	
ISL 10	29.54	34.51	21.520	827.8	0.00	29.54	1544.3	.063	
ISL 25	29.05	34.60	21.819	599.5	0.00	29.04	1543.9	.158	
ISL 50	27.54	34.82	22.409	544.0	0.00	27.53	1541.2	.288	
ISL 75	26.22	34.81	23.213	487.9	0.00	26.20	1535.8	.425	
ISL 100	23.29	34.83	23.721	420.4	0.00	23.27	1532.2	.538	
ISL 150	21.34	35.01	24.411	358.3	0.00	21.31	1528.2	.730	

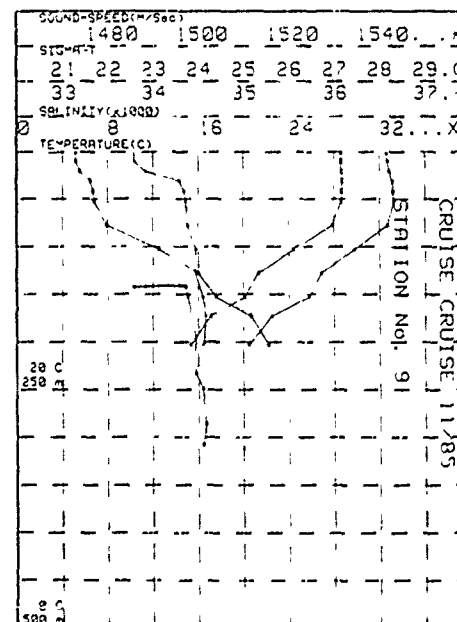
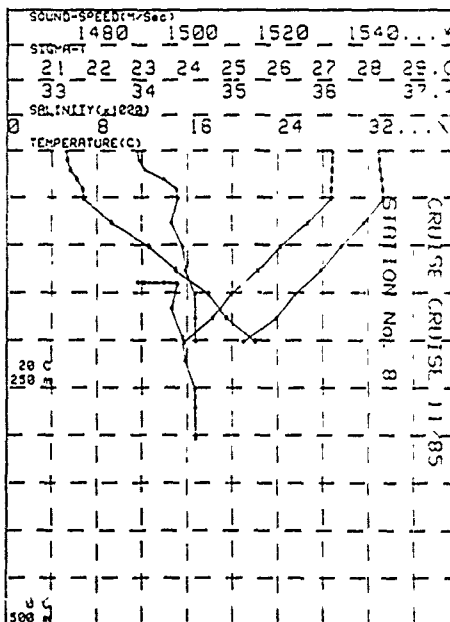
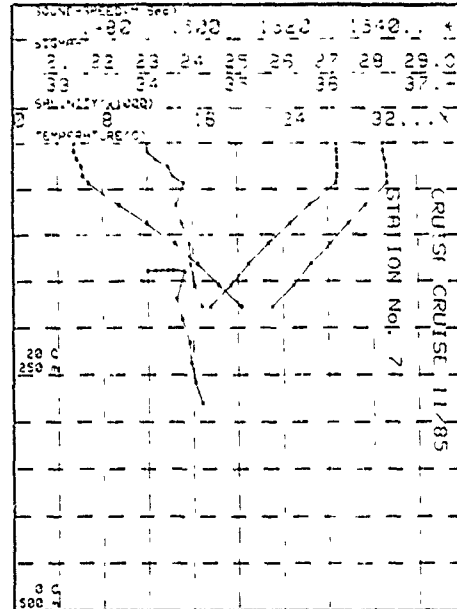
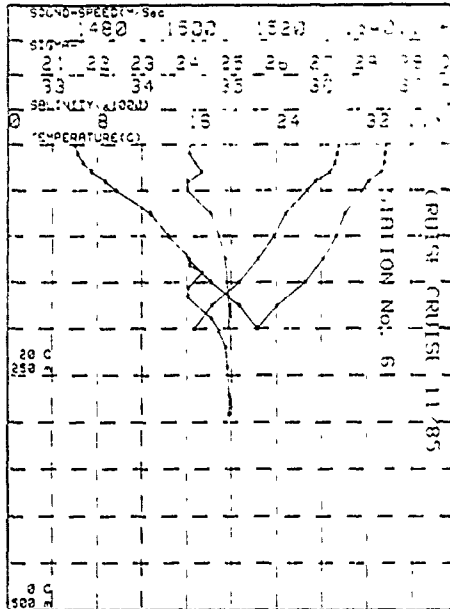


STATION		15.518	116.046	CRUISE 11/85			
DATE= 02/04/85		TIME= 0535GMT				DEPTH# 5470	
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL	POT.TEMP	
m	°C	Pps	kg/m ³	°C	ML/L	°C	
088	0	29.650	34.538	21.501	828.9	0.00	29.65
088	10	29.470	34.533	21.558	823.9	0.00	29.47
088	20	29.250	34.598	21.679	812.7	0.00	29.25
088	30	29.820	34.674	21.882	793.7	0.00	29.81
088	40	27.520	34.514	22.187	764.8	0.00	27.51
088	50	28.770	34.512	22.423	742.4	0.00	28.76
088	75	24.870	34.775	23.212	688.1	0.00	24.85
088	100	23.790	34.863	23.601	631.9	0.00	23.77
088	125	22.400	34.941	24.062	580.8	0.00	22.37
088	150	20.700	34.957	24.544	543.5	0.00	20.67
088	175	18.180	34.980	25.188	502.8	0.00	18.15
088	200	16.680	34.972	25.589	468.8	0.00	16.65
ISL	0	29.65	34.54	21.501	828.9	0.00	29.65
ISL	10	29.47	34.53	21.558	823.9	0.00	29.47
ISL	25	29.14	34.64	21.768	804.4	0.00	29.14
ISL	50	26.77	34.51	22.423	742.4	0.00	26.76
ISL	75	24.87	34.78	23.212	688.1	0.00	24.86
ISL	100	23.78	34.86	23.601	631.9	0.00	23.77
ISL	150	20.70	34.96	24.544	543.5	0.00	20.67
ISL	200	18.68	34.97	25.589	468.8	0.00	18.65

STATION 7		12.035	106.306	CRUISE 11/85		DEPTH# 5560		
DATE= 12/04/85		TIME= 0837GMT						
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TEMP	S.S	
m	°C	Pps	kg/m ³	°C	ML/L	°C	R/Smo	
0	28.860	33.994	21.358	842.7	0.00	28.86	1542.4	
088	8	28.860	33.994	21.358	842.0	0.00	28.86	1542.5
088	18	28.680	34.088	21.422	837.3	0.00	28.68	1542.8
088	28	29.900	34.229	21.521	828.1	0.00	29.89	1543.1
088	38	28.900	34.282	21.581	824.7	0.00	28.89	1543.4
088	48	29.800	34.607	21.888	812.8	0.00	29.79	1543.4
088	68	28.450	34.319	22.581	787.4	0.00	28.43	1538.8
088	88	24.640	34.378	23.862	690.6	0.00	24.62	1534.7
088	110	22.730	34.481	25.004	631.8	0.00	22.71	1530.5
088	132	20.150	34.675	26.109	564.3	0.00	20.12	1525.2
088	155	19.350	34.518	26.584	541.5	0.00	19.32	1522.3
088	178	17.540	34.586	27.077	523.0	0.00	17.51	1517.8
ISL	0	28.86	33.99	21.358	842.7	0.00	28.86	1542.4
ISL	10	28.86	34.00	21.362	842.8	0.00	28.86	1542.5
ISL	25	28.80	34.22	21.512	838.9	0.00	28.80	1543.1
ISL	50	28.19	34.37	21.858	808.7	0.00	28.18	1542.2
ISL	75	25.81	34.34	22.593	727.1	0.00	25.79	1537.2
ISL	100	23.58	34.43	23.335	697.2	0.00	23.56	1532.4
ISL	150	19.72	34.51	24.441	551.2	0.00	19.69	1523.2

STATION 8		12.125	106.178	CRUISE 11/85		DEPTH# 5554		
DATE= 12/04/85		TIME= 0824GMT						
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TEMP	S.S	
m	°C	Pps	kg/m ³	°C	ML/L	°C	R/Smo	
088	0	29.870	33.952	21.323	848.0	0.00	29.87	1542.3
088	10	28.650	33.988	21.340	844.8	0.00	28.65	1542.5
088	21	28.800	34.032	21.408	838.9	0.00	28.79	1542.8
088	31	28.820	34.244	21.559	824.7	0.00	28.81	1543.1
088	42	29.750	34.384	21.687	812.8	0.00	29.74	1543.3
088	52	29.770	34.354	21.755	811.6	0.00	29.71	1543.4
088	77	26.630	34.325	22.329	752.7	0.00	26.61	1539.1
088	102	24.230	34.449	23.158	674.3	0.00	24.21	1534.1
088	127	22.260	34.684	23.754	618.1	0.00	22.23	1529.8
088	152	19.860	34.585	24.479	549.0	0.00	19.86	1523.8
088	177	18.310	34.593	24.885	511.5	0.00	18.29	1519.8
088	202	15.700	34.593	25.503	452.8	0.00	15.67	1512.4
ISL	0	29.87	33.95	21.323	848.0	0.00	29.87	1542.3
ISL	10	28.65	33.97	21.340	844.8	0.00	28.65	1542.5
ISL	25	28.82	34.12	21.471	832.8	0.00	28.81	1542.8
ISL	50	28.73	34.26	21.680	811.8	0.00	28.71	1543.3
ISL	75	26.81	34.33	22.311	758.1	0.00	26.79	1538.5
ISL	100	24.61	34.44	23.100	679.7	0.00	24.58	1534.4
ISL	150	20.05	34.58	24.479	554.3	0.00	20.02	1524.2
ISL	200	15.95	34.59	25.448	458.3	0.00	15.82	1513.1

STATION		12.198	106.276	CRUISE 11/85		DEPTH# 5400	
DATE= 14/04/85		TIME= 0837GMT					
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TEMP	S.S
m	°C	Pps	kg/m ³	°C	ML/L	°C	R/Smo
088	0	28.810	33.787	21.285	848.8	0.00	28.81
088	10	28.810	33.789	21.287	849.9	0.00	28.81
088	21	28.640	33.819	21.374	841.8	0.00	28.63
088	31	28.740	34.293	21.422	816.8	0.00	28.73
088	42	28.880	34.342	21.679	813.8	0.00	28.87
088	53	28.640	34.381	21.706	811.4	0.00	28.63
088	78	27.830	34.383	21.848	785.4	0.00	27.81
088	103	24.390	34.472	23.128	677.2	0.00	24.37
088	128	21.330	34.474	24.005	594.1	0.00	21.31
088	153	20.100	34.548	24.383	557.9	0.00	20.07
088	173	17.110	34.585	25.111	503.9	0.00	17.08
088	203	15.350	34.558	25.555	467.8	0.00	15.32
ISL	0	28.81	33.79	21.285	848.8	0.00	28.81
ISL	10	28.81	33.79	21.287	849.9	0.00	28.81
ISL	25	28.70	34.11	21.488	830.5	0.00	28.69
ISL	50	28.67	34.26	21.683	812.8	0.00	28.66
ISL	75	28.07	34.38	21.809	782.9	0.00	28.05
ISL	100	24.78	34.47	23.005	688.9	0.00	24.76
ISL	150	20.29	34.54	24.312	563.5	0.00	20.27
ISL	200	15.38	34.57	25.516	451.5	0.00	15.35



Cruise RANRL 6/85 (SEAMAP 2)

*Notes for cruise 6/85 (SEAMAP 2)**Additional Nansen data for cruise RANRL 6/85 (SEAMAP 2)*

DEPTH (m)	T	S	O ₂ (ml/l)	
360	12.57	34.727?	4.52	Station 2
2600?	1.912	34.731	4.25	Station 3
Midway?	1.51	34.877?	4.27	
3515?	1.277	34.735	4.38	
297	10.33	-	-	Station 7
460	-	34.667	5.18	

The depths of 687 m and deeper for station 3 have a degree of uncertainty, in that three bottles were apparently put at wrong depths by 100 m deeper or shallower than intended. It is assumed the winch operator was unfamiliar with the mechanical meter block used, and winch wire out (L) was adjusted accordingly.

Other sources of data for cruise RANRL 6/85 (SEAMAP 2)

Hamiiton, L.J. and Boyle, J.A. (1988)

"Oceanographic Data Report for South Pacific Cruises in the SEAMAP series. Part 2: Winter Survey Data".

WSRL Technical Memorandum No.15/89.

Contains XBT cross-sections, satellite SST fields, geostrophic current values, surface samples, thermo-salinograph data, wind vectors, sea state and swell height diagrams, along the cruise track.

Jenkins, C.J., Coleman, R., Keene, J.B., Pritchard, T.R., Manning, P.B. and Schneider, P.M. (1986)

"Geophysical/Geological Results of 'COOK' SEAMAP 6-85 Cruise: South Tasman Sea and Southwest Pacific Ocean".

Report No.20, Ocean Sciences Institute, University of Sydney

Jenkins, C.J., Keene, J.B., Pritchard, T.R. and Schneider, P.M. (1986)

"Seafloor Photography in the Tasman Sea: Results of the 1985 Sydney University/HMAS COOK Program".

Report No.18, Ocean Sciences Institute, University of Sydney

Scott, B.D. (1985)

"RAN Research Laboratory Oceanographic Cruise Report for RANRL 6/85".

(Unpublished document). A narrative of the actual cruise

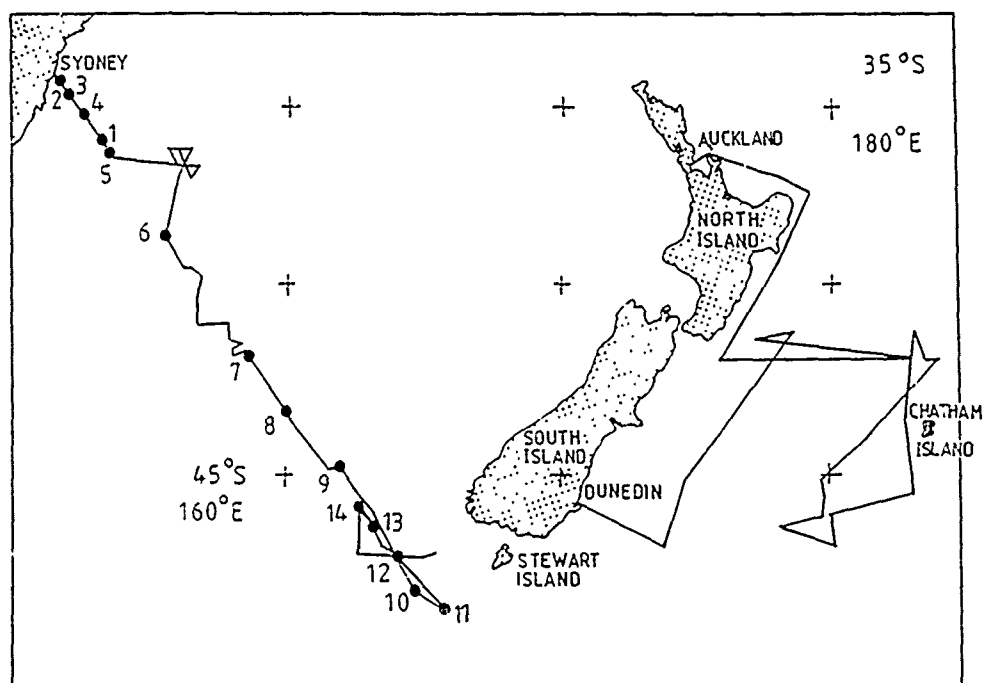


Figure 20. Nansen station positions for cruise RANRL 6/85 (SEAMAP 2)

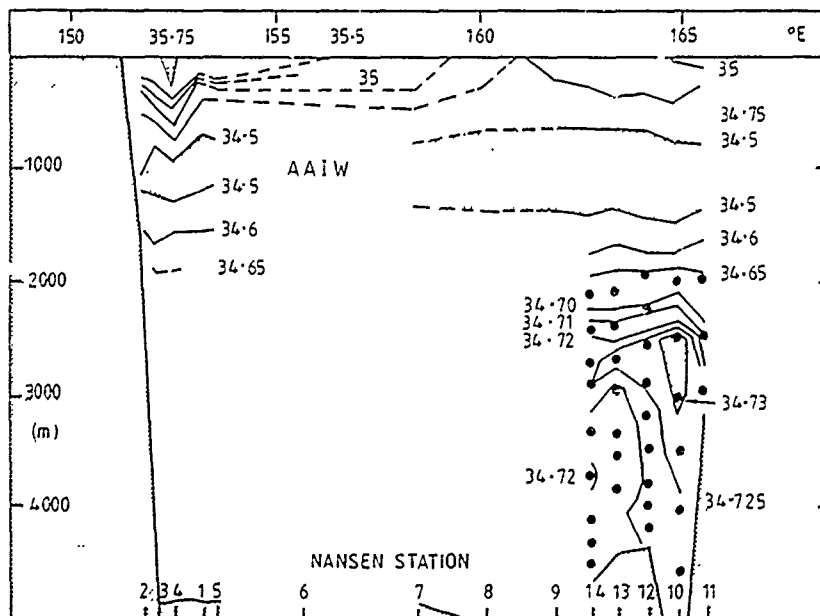
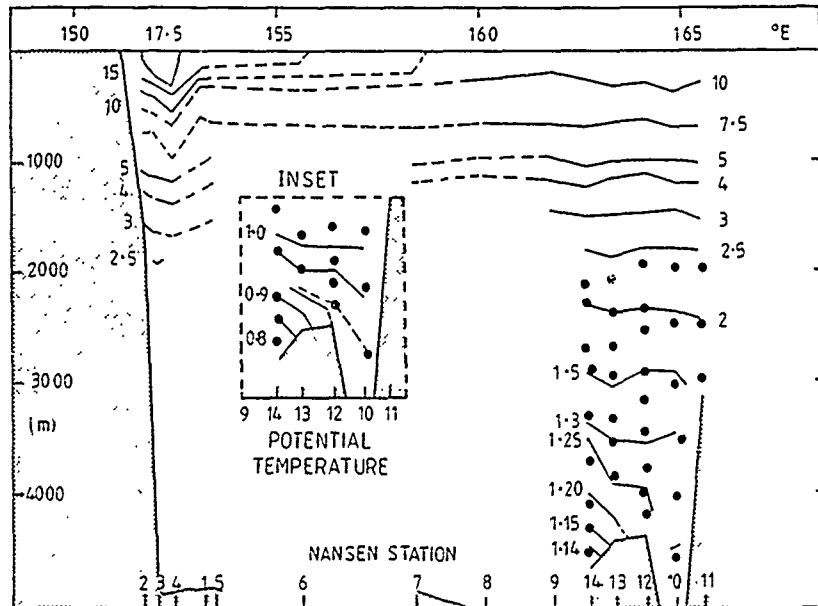


Figure 21. Temperature and salinity cross-sections from Sydney to south of New Zealand in July 1985 for survey RANRL 6/85 (SEAMAP 2)

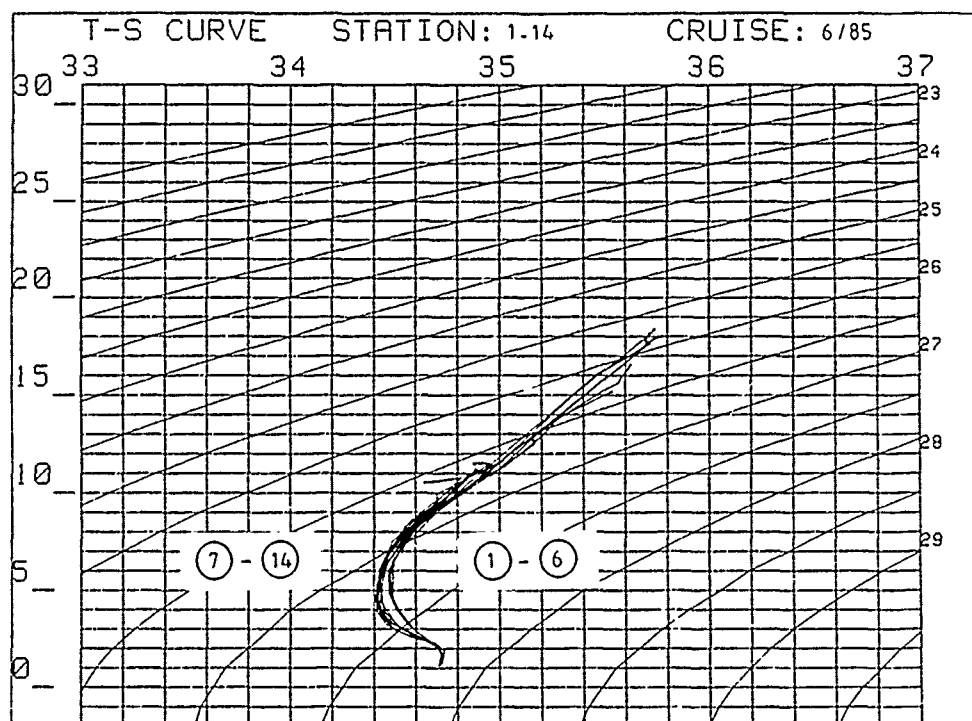


Figure 22. Temperature-salinity curves for cruise RANRL 6/85

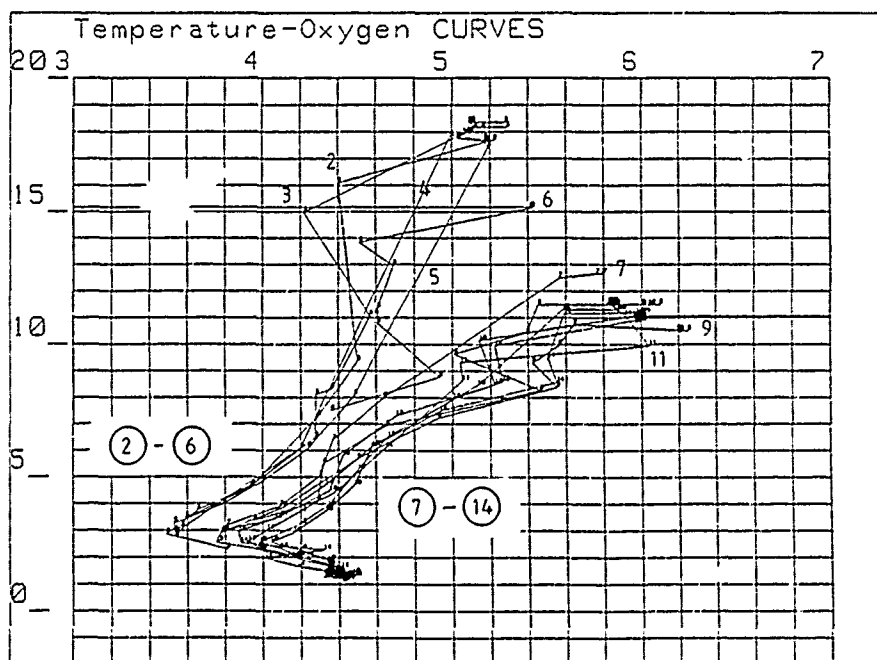
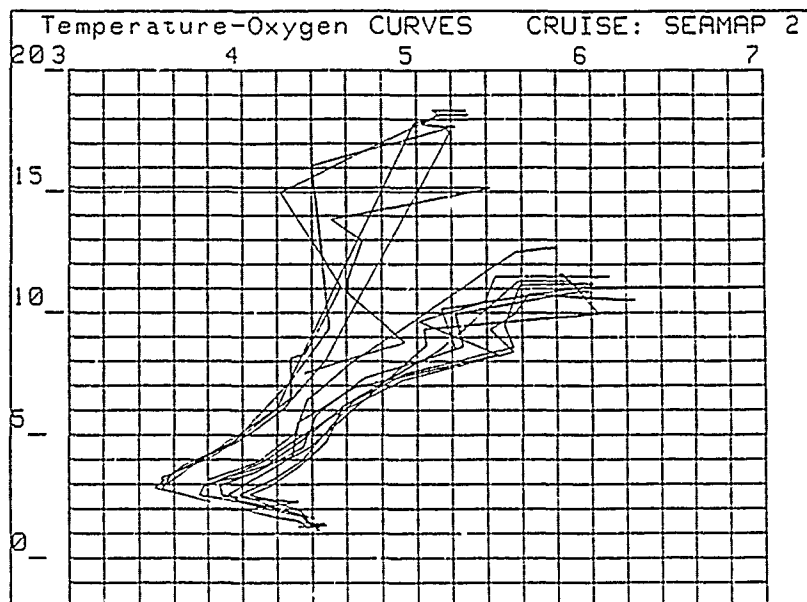
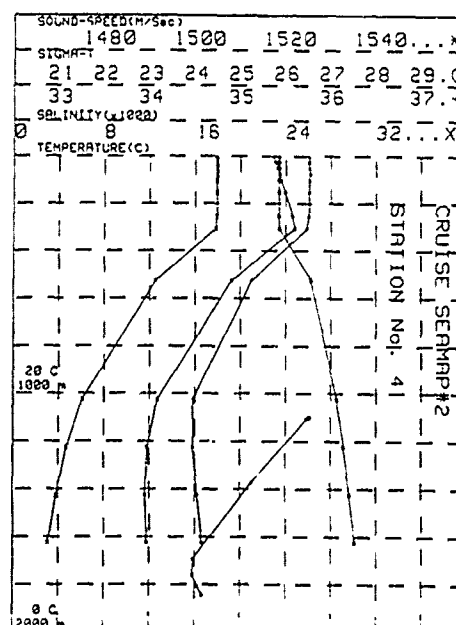
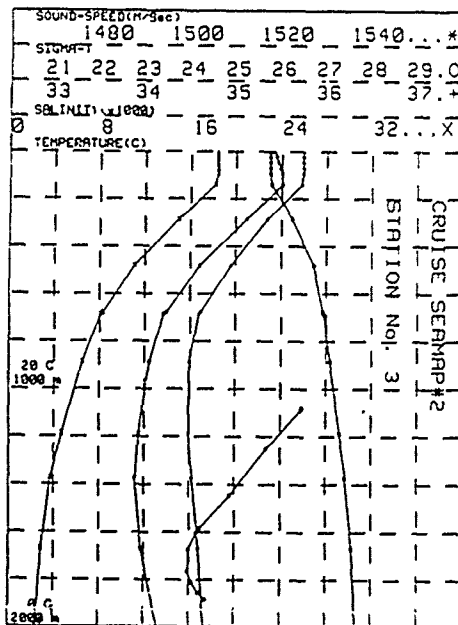
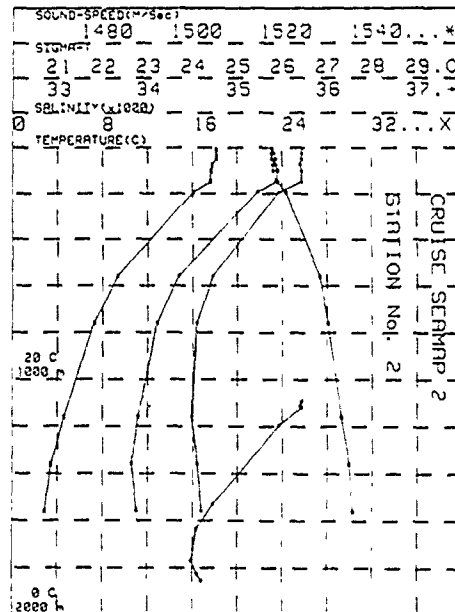
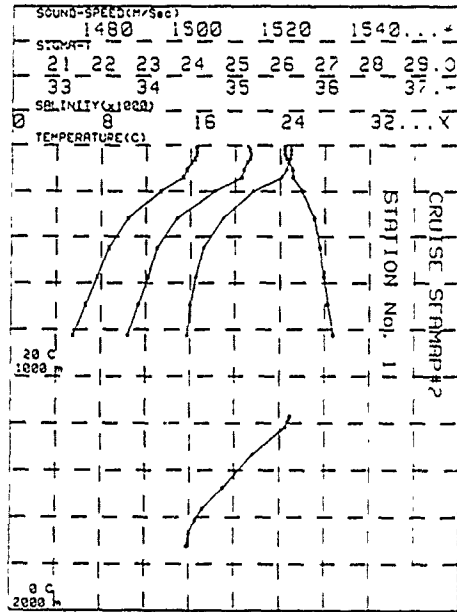


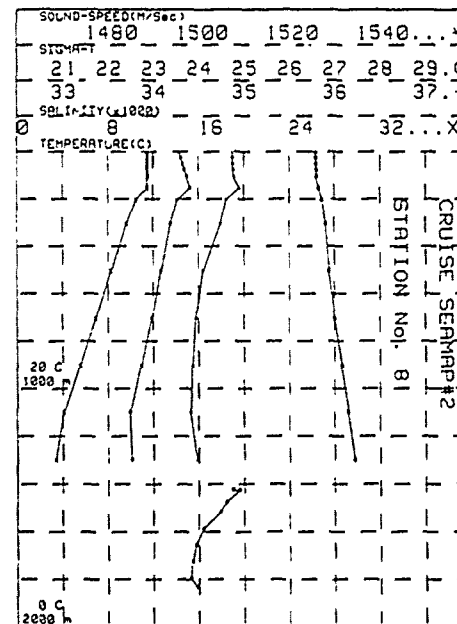
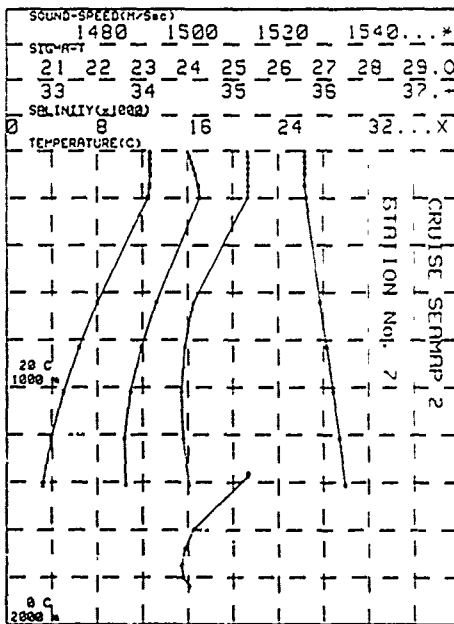
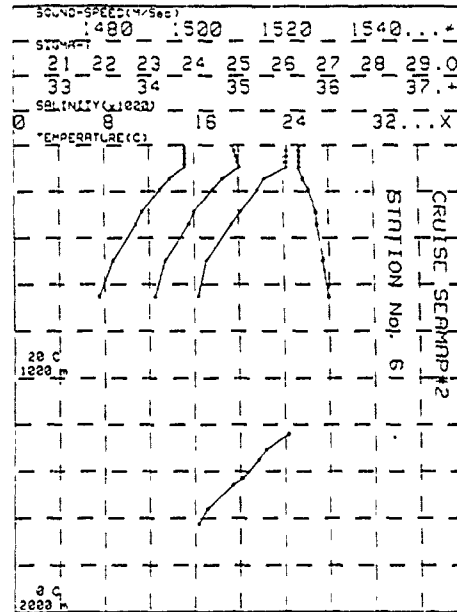
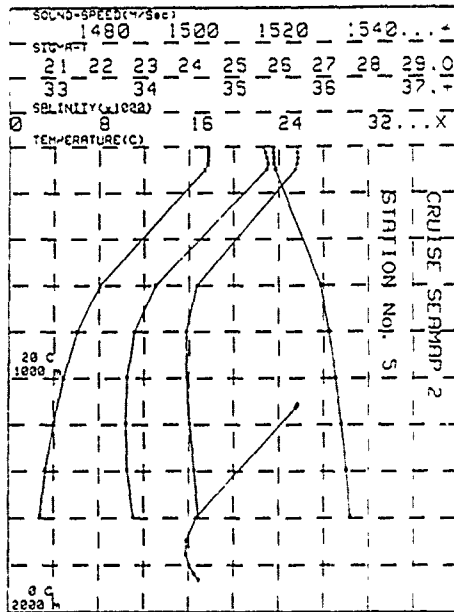
Figure 23. Temperature-oxygen curves for cruise RANRL 6/85

STATION 1										STATION 2									
DATE= 23/07/1983										DATE= 01/08/83									
TIME= 1035GMT										TIME= 1310EST									
SEANAP2										SEANAP2									
DEPTH= 4847										DEPTH= 1700									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL	POT.TEMP	S.S			DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL	POT.TEMP	S.S		
m	°C	Pps	CL/T	ML/L	°C	H/Sec	Dyn #			m	°C	Pps	CL/T	ML/L	°C	H/Sec	Dyn #		
OBS 0	16.320	35.620	28.105	198.7	0.00	16.32	1512.9			OBS 0	16.180	35.719	25.779	220.7	5.26	16.18	1517.9		
OBS 20	16.350	35.623	28.100	193.8	0.00	16.35	1513.3			OBS 25	16.190	35.719	25.777	221.7	5.18	16.19	1518.3		
OBS 40	16.330	35.620	28.102	191.2	0.09	16.32	1513.3			OBS 50	16.170	35.716	25.779	222.3	5.12	16.18	1518.7		
OBS 58	16.350	35.611	28.108	186.3	0.00	16.34	1512.3			OBS 75	17.790	35.687	25.841	215.4	5.03	17.77	1517.9		
OBS 73	16.080	35.590	28.184	184.3	0.03	16.07	1512.7			OBS 100	17.670	35.713	25.902	212.3	5.18	17.65	1518.0		
OBS 107	15.430	35.556	28.258	177.9	0.00	15.41	1511.8			OBS 148	17.650	35.719	25.910	213.1	5.18	17.62	1518.8		
OBS 140	15.500	35.517	28.291	179.2	0.00	15.34	1511.5			OBS 195	16.090	35.481	26.087	197.5	4.40	16.06	1514.8		
OBS 200	15.310	35.206	28.488	156.7	0.00	15.28	1505.4			OBS 540	9.380	34.729	26.845	150.7	4.30	9.32	1487.0		
OBS 321	10.440	34.867	28.772	133.5	0.00	10.40	1487.1			OBS 780	7.290	34.545	27.020	115.0	4.29	7.21	1482.1		
OBS 448	6.700	34.648	28.888	123.8	0.00	6.65	1482.5			OBS 1180	4.810	34.486	27.314	86.9	3.93	4.51	1487.9		
OBS 575	7.870	34.581	28.938	118.5	0.00	7.81	1490.5			OBS 1360	3.450	34.552	27.485	66.3	3.58	3.53	1486.5		
OBS 664	6.830	34.499	27.073	107.8	0.00	6.58	1486.4			OBS 1540	2.900	34.800	27.375	60.5	3.34	2.79	1487.8		
OBS 825	5.520	34.470	27.184	96.5	0.00	5.43	1486.1												
ISL 0	16.52	35.62	28.105	188.7	0.00	16.52	1512.9	0.000		ISL 0	16.18	35.72	25.779	220.7	5.26	16.18	1517.9	0.000	
ISL 10	16.54	35.62	28.102	190.4	0.00	16.54	1513.1	.019		ISL 10	16.18	35.72	25.777	221.7	5.18	16.19	1518.3	.019	
ISL 25	16.35	35.62	28.101	180.9	0.00	16.34	1513.4	.048		ISL 25	16.17	35.72	25.779	222.3	5.12	16.18	1518.7	.111	
ISL 50	16.48	35.62	28.117	190.2	0.00	16.45	1513.5	.095		ISL 50	17.78	35.70	25.841	215.4	5.03	17.77	1517.9	.184	
ISL 75	16.05	35.59	28.181	183.9	0.00	16.04	1512.8	.142		ISL 75	17.67	35.71	25.902	212.3	5.18	17.65	1518.0	.218	
ISL 100	15.71	35.57	28.236	178.4	0.00	15.39	1512.0	.187		ISL 100	17.38	35.71	25.918	212.4	5.14	17.35	1517.6	.325	
ISL 150	14.98	35.48	28.327	173.1	0.00	14.97	1510.4	.278		ISL 200	15.97	35.49	25.910	194.2	4.40	15.94	1514.2	.427	
ISL 200	13.31	35.20	28.488	156.7	0.00	13.28	1505.4	.358		ISL 250	14.66	35.32	26.237	184.3	4.42	14.60	1511.2	.523	
ISL 250	11.98	34.83	28.628	146.4	0.00	11.85	1501.5	.436		ISL 300	13.78	35.20	26.363	173.2	4.43	13.73	1508.3	.615	
ISL 300	10.85	34.62	28.735	138.7	0.00	10.82	1496.2	.507		ISL 400	11.88	34.99	26.582	154.0	4.48	11.81	1503.3	.784	
ISL 400	9.28	34.71	28.847	127.2	0.00	9.24	1493.9	.630		ISL 500	10.23	34.81	26.759	136.3	4.48	10.17	1499.1	.835	
ISL 500	8.29	34.61	28.923	121.0	0.00	8.24	1491.7	.763		ISL 600	8.82	34.58	26.881	127.3	4.48	8.80	1495.8	1.046	
ISL 600	7.45	34.55	28.987	114.8	0.00	7.38	1490.1	.880		ISL 800	7.00	34.54	27.048	112.8	4.27	6.92	1491.4	1.308	
ISL 800	5.73	34.47	27.170	96.8	0.00	5.68	1486.5	1.084		ISL 1000	5.82	34.51	27.198	98.3	4.12	5.54	1489.4	1.518	
										ISL 1300	3.73	34.53	27.442	73.7	3.68	3.63	1484.7	1.778	
										ISL 1500	3.00	34.58	27.557	62.2	3.58	2.99	1487.0	1.915	

STATION 3										STATION 4									
DATE= 01/08/1983										DATE= 02/08/1983									
TIME= 1130GMT										TIME= 0625GMT									
SEANAP2										SEANAP2									
DEPTH= 4860										DEPTH= 4834									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL	POT.TEMP	S.S			DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL	POT.TEMP	S.S		
m	°C	Pps	CL/T	ML/L	°C	H/Sec	Dyn #			m	°C	Pps	CL/T	ML/L	°C	H/Sec	Dyn #		
OBS 0	18.360	35.741	25.751	223.3	5.28	18.36	1518.4			OBS 0	18.000	35.767	25.861	212.9	5.08	18.00	1517.4	0.000	
OBS 25	18.370	35.741	25.748	224.4	5.09	18.37	1518.4			OBS 25	17.980	35.764	25.861	213.8	5.09	17.99	1517.8		
OBS 47	18.360	35.739	25.750	225.1	5.10	18.35	1518.2			OBS 51	17.960	35.767	25.863	214.4	5.09	17.96	1518.2		
OBS 71	18.380	35.743	25.748	226.1	5.11	18.37	1519.0			OBS 77	17.980	35.774	25.869	214.8	5.09	17.98	1518.7		
OBS 94	18.370	35.739	25.747	226.9	5.10	18.35	1520.0			OBS 103	17.990	35.770	25.868	215.9	5.10	17.97	1519.1		
OBS 142	18.380	35.727	25.765	226.9	5.12	18.38	1520.2			OBS 154	17.990	35.765	25.862	216.0	5.09	17.99	1519.8		
OBS 287	14.880	35.347	28.215	186.9	4.22	14.84	1512.5	.880		OBS 259	17.980	35.763	25.862	221.3	5.18	17.94	1521.5		
OBS 482	11.070	34.851	28.725	142.0	4.57	11.01	1502.1			OBS 308	17.870	35.738	25.868	222.4	4.19	17.82	1522.1		
OBS 640	7.320	34.614	28.923	124.3	4.36	7.25	1494.8			OBS 525	12.370	35.132	28.581	158.0	0.03	12.50	1504.2		
OBS 687	6.120	34.596	28.838	122.4	4.28	6.09	1494.2			OBS 1025	6.110	34.478	27.128	106.5	4.21	6.01	1491.8		
OBS 887	6.200	34.483	27.087	109.1	4.28	6.42	1491.0			OBS 1225	4.140	34.480	27.293	88.9	0.00	4.64	1489.5		
OBS 1187	4.700	34.487	27.203	88.5	3.94	4.60	1488.8			OBS 1425	3.820	34.530	27.431	76.1	0.00	3.71	1489.1		
OBS 1373	3.750	34.532	27.440	74.8	3.65	3.84	1488.0			OBS 1825	3.000	34.581	27.543	64.5	3.57	2.96	1489.4		
OBS 1870	2.870	34.802	27.579	60.4	3.49	2.75	1489.5												
OBS 2041	2.312	34.876	27.687	50.4	3.81	2.18	1483.7												
ISL 0	18.38	35.74	25.751	223.3	5.28	18.38	1518.4	0.000		ISL 0	18.00	35.77	25.861	212.9	5.08	18.00	1517.4	0.000	
ISL 10	18.37	35.74	25.750	223.8	5.17	18.38	1518.8	.022		ISL 10	17.99	35.77	25.861	213.3	5.09	17.99	1517.8	.021	
ISL 25	18.37	35.74	25.748	224.4	5.09	18.38	1518.8	.058		ISL 25	17.99	35.78	25.861	213.7	5.09	17.99	1517.8	.053	
ISL 50	18.38	35.74	25.748	225.2	5.10	18.38	1519.2	.112		ISL 50	17.99	35.77	25.863	214.4	5.09	17.98	1518.2	.107	
ISL 75	18.38	35.74	25.748	226.3	5.11	18.37	1519.7	.186		ISL 100	17.99	35.77	25.868	215.8	5.10	17.97	1519.0	.314	
ISL 100	18.37	35.74	25.748	226.7	5.11	18.35	1520.1	.225		ISL 150	17.99	35.77	25.862	217.9	5.09	17.96	1519.8	.323	
ISL 150	18.00	35.70	25.813	222.5	5.04	17.97	1518.8	.338		ISL 200	17.99	35.76	25.862	219.7	5.08	17.95	1520.8	.432	
ISL 200	16.87	35.57	25.980	208.1	4.84	16.84	1517.1	.448		ISL 250	17.98	35.76	25.863	221.2	5.09	17.94	1521.5	.542	
ISL 250	15.77	35.44	28.126	194.4	4.36	15.73	1514.4	.547		ISL 300	17.92	35.74	25.864	222.2	5.03	17.86	1522.0	.653	
ISL 300	14.66	35.32	26.206	181.2	4.26	14.64	1511.7	.641		ISL 400	15.00	35.48	26.208	183.0	4.30	15.07	1508.7	.764	
ISL 400	12.57	35.11	26.558	157.0	4.49	12.51	1508.1	.812		ISL 500	13.20	35.19	26.514	164.1	4.38	13.02	1504.8	1.04	
ISL 500	11.23	34.92	26.743	140.4	4.55	10.99	1501.4	.961		ISL 600	11.32	34.87	26.875	149.3	4.31	11.25	1504.8	1.19	
ISL 600	10.11	34.79	26.843	123.5	4.64	10.03	1497.8	1.097		ISL 800	8.60	34.68	27.064	127.9	4.29	8.28	1492.2	1.47	
ISL 800	7.18	34.53	27.023	115.0	4.28	7.08	1487.2	1.342		ISL 1000	6.33	34.59	27.125	102.8	4.28	6.28	1488.2	1.71	
ISL 1000	5.78	34.49	27.108	101.6	4.17	5.69	1480.0	1.559		ISL 1300	4.37	34.50	27.258	84.5	0.00	4.27	1489.3	2.06	
ISL 1300	4.39	34.51	27.390	79.8	3.73	3.84	1488.1	1.832		ISL 1500	3.53	34.58	27.505	68.0	3.21	3.44	1488.3	2.37	
ISL 1500	3.33	34.58	27.505	68.0	3.54	3.21	1484.3	1.879											
ISL 2000	2.05	34.67	27.678	51.4	3.72	2.21	1482.8	2.275											



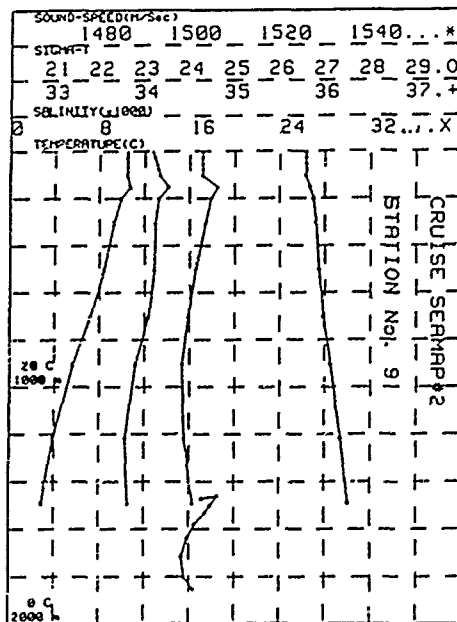
DATE		TIME		SEAMAP#		DEPTH		S.S	
04/06/1965		213507				00774		9999	
DEPTH	HC	SALINITY	SIGMA-T	CL/V	CL	POT-TEMP	S.S		
	MC	PART		AL/T	M/L		H/5		Dyn #
008	0	15.180	35.159	28.353	186.2	0.00	15.18	1506.8	
008	25	15.180	35.337	28.347	187.5	5.42	15.18	1506.0	
008	50	15.180	35.336	28.346	188.1	10.84	15.18	1505.1	
008	74	15.180	35.333	28.348	188.8	5.41	15.15	1509.0	
008	97	15.180	35.332	28.348	190.0	6.42	15.15	1510.1	
008	148	13.850	35.282	28.437	187.2	6.1	12.83	1506.4	
008	153	13.850	35.257	28.451	187.8	6.1	12.83	1505.1	
008	286	11.370	35.028	28.728	137.4	4.61	11.33	1500.9	
008	342	10.610	34.818	28.745	136.8	4.61	10.79	1498.8	
008	378	7.870	34.580	28.745	137.0	4.61	7.87	1498.0	
008	654	7.520	34.540	28.943	137.0	4.38	7.45	1490.2	
134	0	15.18	35.54	28.353	186.2	0.00	15.18	1506.8	0.000
134	0	15.17	35.54	28.348	186.8	0.00	15.17	1506.8	.017
134	25	15.18	35.54	28.347	187.5	5.42	15.18	1506.0	.042
134	50	15.17	35.54	28.349	188.1	9.41	15.18	1506.4	.084
134	74	15.18	35.53	28.348	188.8	5.41	15.15	1509.0	.100
134	100	15.07	35.52	28.352	189.3	5.33	15.03	1509.0	.140
134	150	15.07	35.58	28.449	181.3	4.53	12.75	1506.2	.231
134	200	12.83	35.518	28.377	150.2	4.66	12.81	1503.8	.329
134	250	11.67	35.272	28.413	122.2	4.61	11.61	1501.4	.402
134	300	8.23	35.000	28.731	137.4	4.61	11.21	1498.0	.472
134	400	6.94	34.79	28.733	132.8	4.63	9.92	1494.3	.608
134	500	6.44	34.56	28.722	128.2	4.63	8.70	1493.3	.677
134	600	7.87	34.35	28.898	122.2	4.63	7.87	1493.3	.737



STATION	44.425	152.02E	562649E2				
DATE	10/08/1965	TIME = 0500Z	DEPTH = 9999				
DEPTH	TEMP	SALINITY	SIGMA-T				
m	°C	Pct	CLY/				
CMS 0	10.1530	34.645	78.543	0.25	10.1530	1491.9	
CMS 27	10.3230	34.643	78.584	144.9	0.21	10.3232	1492.2
CMS 54	10.6440	34.644	78.620	285.8	0.18	10.6440	1492.5
CMS 77	10.5130	34.644	78.586	145.6	0.22	10.5130	1493.0
CMS 105	10.5400	34.644	78.584	146.0	0.18	10.5399	1493.8
CMS 153	10.7740	34.618	78.678	320.0	0.66	10.7740	1495.5
CMS 203	9.7700	34.700	78.734	515.8	0.95	9.7695	1493.3
CMS 305	9.9320	34.680	78.618	128.3	0.42	9.9299	1492.5
CMS 505	8.5400	34.585	78.672	129.1	0.55	8.5385	1496.2
CMS 706	7.7700	34.610	78.730	129.5	0.55	7.7695	1496.2
CMS 905	9.0700	34.421	77.133	102.5	0.40	9.0695	1496.1
CMS 1220	3.9000	34.444	77.357	81.4	0.11	3.8995	1445.9
CMS 1463	2.9280	34.545	77.528	64.4	0.78	2.88	1466.3
ISL 0	10.153	34.64	78.583	144.3	0.25	10.153	1491.9
ISL 10	10.323	34.64	78.583	144.3	0.23	10.323	1492.0
ISL 29	10.513	34.644	78.583	144.6	0.21	10.513	1492.2
ISL 54	10.644	34.644	78.583	145.5	0.20	10.644	1492.7
ISL 73	10.513	34.65	78.587	145.6	0.21	10.513	1493.0
ISL 120	10.533	34.63	78.583	146.4	0.21	10.532	1493.5
ISL 153	10.774	34.63	78.733	129.5	0.66	10.774	1495.5
ISL 200	10.010	34.74	78.732	75.7	0.58	9.99	1499.4
ISL 250	9.845	34.71	78.706	120.3	0.48	9.842	1492.9
ISL 300	9.223	34.68	78.614	128.5	0.42	9.223	1492.3
ISL 350	8.540	34.64	78.618	128.3	0.48	8.54	1492.7
ISL 500	6.903	34.57	78.670	122.8	0.55	6.87	1492.2
ISL 600	7.400	34.53	78.618	128.2	0.52	7.383	1491.9
ISL 800	8.47	34.47	77.054	111.0	0.40	8.469	1491.0
ISL 1000	10.643	34.63	77.200	96.8	0.38	10.640	1487.1
ISL 1300	3.56	34.47	77.410	76.3	0.01	3.48	1433.1

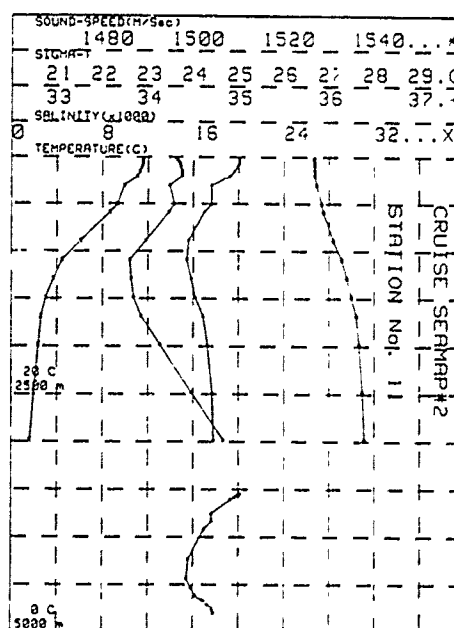
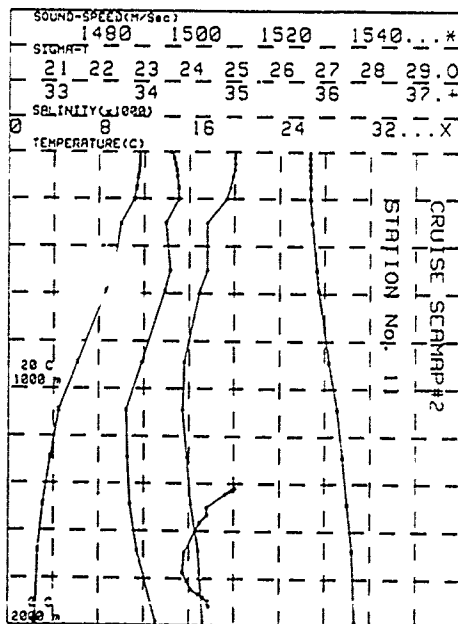
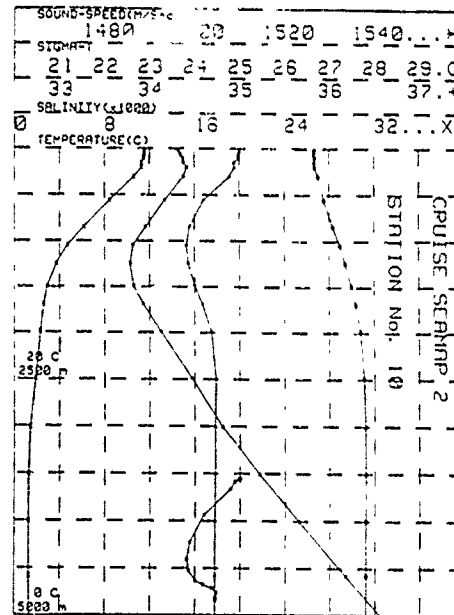
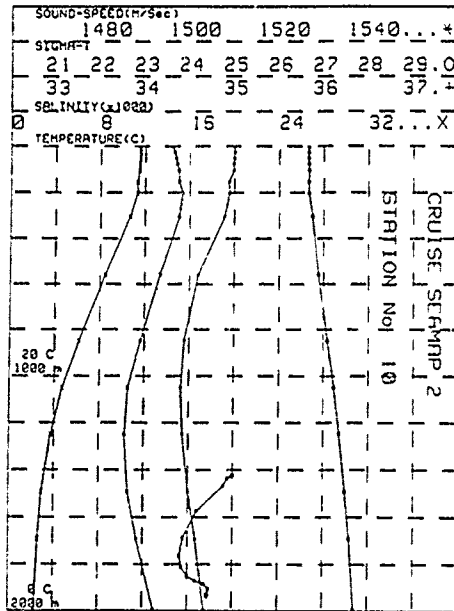
STATION 10		47.445		146.133		SEAMP 2			
DATE= 12/08/83		TIME= 0555GHT				DEPTH= 5920			
DEPTH	W	SALINITY	STGM-F	A.S.V.	CH/TF	CH/L	CH/H	CH/L	S.S
	°C								N/MSIC
005	0	25.03	26.873	117.5	5.84	11.58			
005	28	11.590	35.003	26.70	136.7	5.84	11.19	1496	5
005	32	11.570	33.998	28.649	137.4	5.82	11.16	1406.8	
005	36	11.510	34.990	28.674	137.5	5.84	11.50	1497.0	
005	105	11.520	34.984	28.680	137.5	5.84	11.49	1497.5	
005	115	11.320	34.941	26.672	136.6	5.84	11.20	1497.0	
005	205	11.310	34.947	26.678	140.5	5.58	11.28	1496.4	
005	255	11.300	34.956	26.684	140.0	5.00	11.28	1497.5	
005	300	8.480	34.601	26.686	125.7	5.13	4.62	1493.5	
005	350	8.190	34.444	27.001	110.7	4.58	0.11	1489.1	
005	400	7.410	34.408	27.431	74.7	4.58	0.11	1489.5	
005	1250	3.740	34.431	27.380	81.0	4.33	3.84	1485.8	
005	1463	2.840	34.503	27.448	67.7	4.18	2.63	1466.0	
005	1650	2.400	34.587	27.468	58.6	4.18	2.63	1466.0	
005	1963	2.300	34.648	27.990	49.0	4.19	2.18	1452.5	
005	2493	1.900	34.748	27.700	42.5	4.34	1.72	1499.4	
005	3013	1.731	34.770	27.600	38.3	4.39	1.20	1506.4	
005	3510	1.285	34.778	27.877	30.7	4.39	1.02	1504.4	
005	4005	1.285	34.774	27.804	30.2	4.32	.96	1523.1	
005	4500	1.303	34.724	27.803	48.0	4.44	.91	1535.5	
005	5181	1.711	34.721	27.748	43.8	4.38	.90	1551.9	
005	5580	1.408	34.720	27.782	45.1	4.37	.89	1551.9	
005	5740	1.443	34.723	27.782	48.2	4.32	.89	1555.7	

ISL 0	11.54	35.00	26.671	133.8	5.84	11.58	1496.0	0.0000
ISL 10	11.54	35.00	26.671	136.3	5.84	11.58	1496.2	0.0141
ISL 20	11.54	35.00	26.670	137.5	5.84	11.59	1496.5	0.0340
ISL 30	11.54	35.00	26.669	138.4	5.82	11.57	1496.1	0.0539
ISL 35	11.51	34.99	26.674	136.7	5.83	11.50	1497.0	0.0333
ISL 100	11.51	34.99	26.680	137.6	5.83	11.49	1497.4	0.0333
ISL 150	11.53	34.98	26.672	139.5	5.88	11.31	1497.5	0.1287
ISL 200	11.51	34.95	26.678	140.1	5.88	11.30	1498.1	0.2780
ISL 250	11.53	34.95	26.678	137.6	5.88	11.31	1498.1	0.2780
ISL 300	10.99	34.90	26.733	135.0	18.10	10.65	1497.4	0.14
ISL 400	9.82	34.77	26.800	132.1	4.43	9.78	1496.0	0.0
ISL 500	8.96	34.62	26.853	128.4	4.0	8.92	1494.4	0.577
ISL 600	8.15	34.37	27.915	123.4	5.63	8.79	1492.8	0.680
ISL 800	6.85	34.12	27.915	123.4	5.63	8.79	1492.8	0.680
ISL 1000	5.03	34.11	27.125	96.4	4.51	4.95	1494.9	1.2435
ISL 1300	3.54	34.44	27.780	78.0	4.29	3.44	1485.8	1.9038
ISL 1500	2.83	34.51	27.698	67.3	4.15	2.82	1488.8	1.5031
ISL 2000	2.49	34.58	27.698	49.8	4.19	2.15	1492.8	0.4
ISL 2500	1.83	34.74	27.779	42.4	4.34	1.73	1494.0	0.373
ISL 3000	1.43	34.73	27.799	36.3	4.39	1.21	1506.1	2.387
ISL 3500	1.29	34.73	27.807	37.8	4.4	1.02	1514.2	2.557
ISL 4000	1.29	34.73	27.804	38.2	4.42	1.08	1523.0	2.750
ISL 4500	1.30	34.72	27.795	40.3	4.43	1.12	1531.8	2.943
ISL 5000	1.34	34.72	27.798	42.6	4.41	1.30	1541.2	3.137
ISL 5500	1.40	34.72	27.783	44.8	4.45	1.49	1550.4	3.375



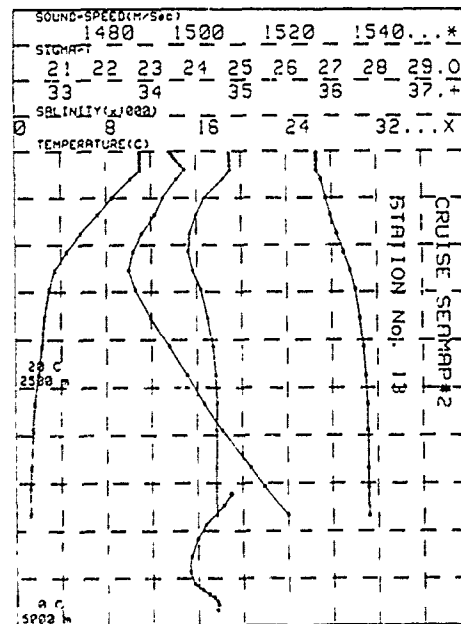
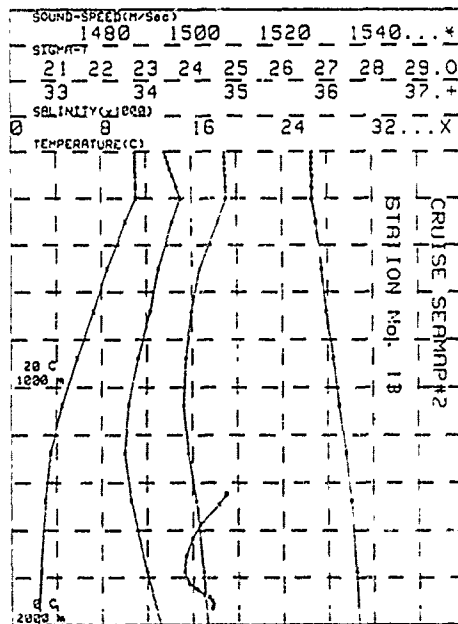
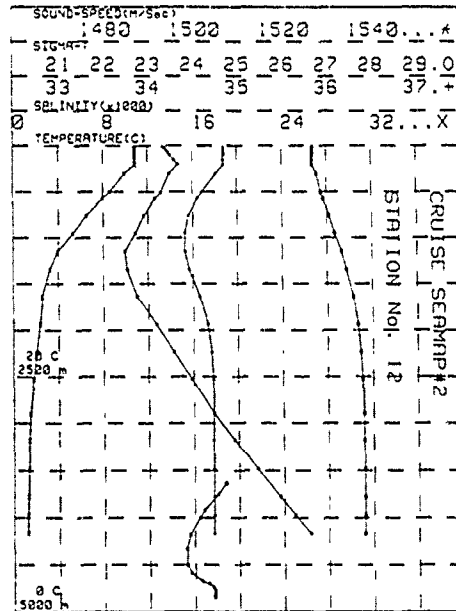
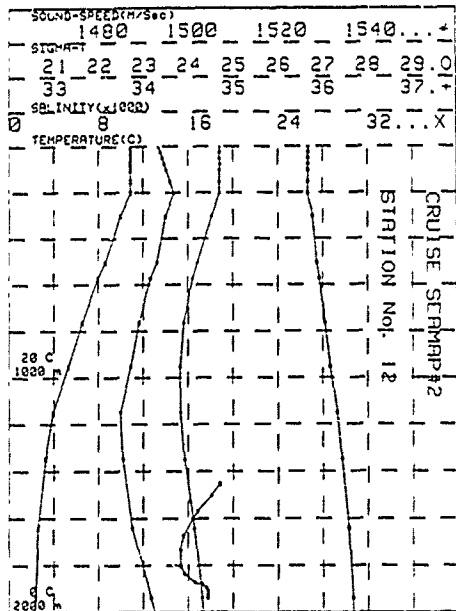
STATION 11		48-155	185 44E	SEASUMP2			
OFFICE 12/09/1983		TIME = 2327GMT	DEPTH=	3135			
OCN ¹	TD ²	SALINITY ³	SIGMA ⁴	A S.V.T	W. C.V.T	POT. TD ⁵	S.S
m	°C	PSU	KG/M ³	°C	°C	°C	PSU
GAS 0	11.600	35.015	26.477	135.4	5.63	11.60	1486.1
GAS 20	11.600	35.008	26.472	135.6	5.62	11.60	1486.5
GAS 31	11.750	35.013	26.478	135.8	5.62	11.53	1486.9
GAS 37	11.550	35.025	26.476	137.1	5.57	11.50	1487.2
GAS 104	11.600	34.967	26.481	137.5	5.85	11.45	1487.3
GAS 134	11.320	34.957	26.484	136.4	5.87	11.30	1497.6
GAS 204	11.210	34.911	26.487	136.3	5.91	11.00	1497.6
GAS 304	9.940	34.703	26.727	137.1	6.04	9.94	1495.8
GAS 504	8.760	34.705	26.834	136.6	6.05	8.67	1495.6
GAS 590	4.680	34.622	26.878	127.5	5.05	5.60	1494.7
GAS 800	6.120	34.447	27.101	107.2	4.65	6.04	1489.5
GAS 1060	4.870	34.426	27.232	86.8	4.58	5.82	1488.5
GAS 1280	3.520	34.437	27.299	72.9	4.63	5.62	1486.4
GAS 1448	2.650	34.523	27.500	57.5	4.02	2.94	1487.0
GAS 1655	3.510	34.608	27.808	57.0	3.92	2.43	1488.5
GAS 1830	2.341	34.958	28.67	52.1	3.91	2.24	1487.0
GAS 2045	1.990	34.992	28.77	45.6	4.23	1.80	1486.7
GAS 2265	1.828	34.726	27.791	41.3	4.41	1.40	1506.7

134	0	11.80	35.02	26.877	135	0	5.82	11.05	1486	1	0.00
134	10	11.80	35.02	26.874	135	0	5.82	11.05	1486	1	0.00
134	20	11.80	35.01	26.872	135	5	5.82	11.00	1486	3	0.04
134	30	11.80	35.01	26.872	135	10	5.82	11.00	1486	3	0.04
134	40	11.39	35.01	26.878	136	0	5.82	11.58	1486	0	0.08
134	50	11.39	35.01	26.878	136	5	5.82	11.58	1486	0	0.08
134	75	11.35	34.91	26.878	137	1	5.82	11.55	1487	2	1.02
134	100	11.47	34.99	26.881	137	4	5.85	11.44	1487	2	1.07
134	150	11.37	34.98	26.884	138	1	5.81	11.47	1487	0	0.08
134	203	11.14	34.92	26.886	138	2	5.81	11.11	1487	0	0.75
134	250	10.51	34.80	26.904	136	3	5.97	10.48	1486	1	0.44
134	300	10.00	34.71	26.725	137	2	6.03	10.94	1486	0	0.11
134	400	9.82	34.70	26.780	134	1	5.38	9.77	1485	2	0.49
134	500	9.66	34.70	26.828	134	1	5.38	9.77	1485	2	0.49
134	600	9.66	34.70	26.828	134	1	5.38	9.77	1485	2	0.49
134	800	9.41	34.57	26.863	127	0	5.04	9.31	1484	1	0.10
134	900	8.67	34.48	27.027	114	2	4.77	8.60	1481	1	0.50
134	1009	5.10	34.44	27.208	96	2	4.40	5.02	1487	2	1.82
134	1300	3.68	34.44	27.404	77	1	4.18	3.54	1486	4	1.20
134	1500	3.02	34.53	27.467	64	7	3.94	2.87	1487	0	0.84
134	2003	2.36	34.68	27.670	51	9	3.94	2.22	1482	0	1.90
134	2300	1.94	34.71	27.743	45	4	4.21	1.78	1486	0	2.13

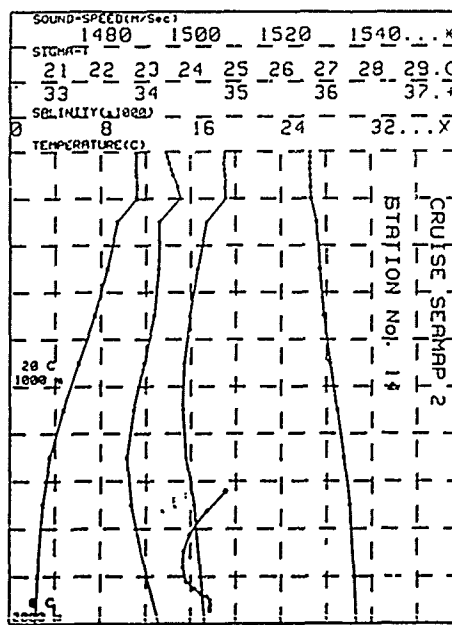
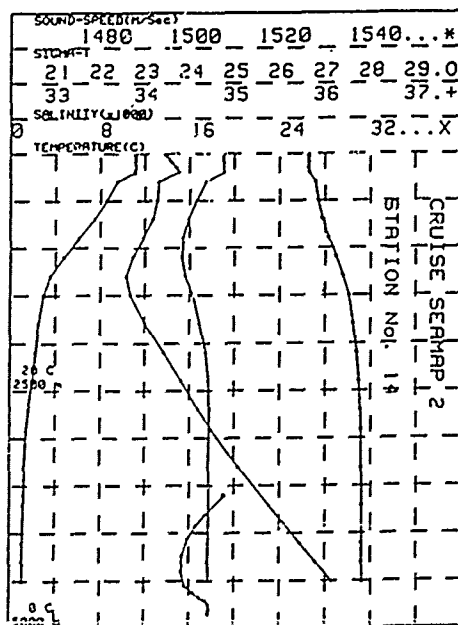


STATION 12		47.005		164.006		SEANAP2		DEPTH 4348	
DATE= 14/08/1985		TIME= 12400HT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt		CL/T	ML/L	°C	M/Sec		
OBS 0	10.880	34.852	26.862	134.9	5.87	10.88	1493.4		
OBS 26	10.880	34.852	26.862	135.5	5.87	10.88	1493.8		
OBS 52	10.900	34.853	26.860	136.4	5.99	10.88	1494.3		
OBS 78	10.890	34.858	26.865	136.4	5.98	10.88	1494.7		
OBS 104	10.900	34.854	26.860	137.5	5.87	10.88	1495.1		
OBS 130	10.910	34.851	26.878	139.1	5.98	10.89	1496.0		
OBS 205	10.920	34.854	26.877	140.2	5.98	10.89	1496.9		
OBS 305	9.900	34.785	26.778	132.3	5.22	9.92	1495.0		
OBS 505	8.820	34.608	26.872	128.3	5.28	8.57	1493.1		
OBS 574	7.970	34.554	26.928	121.5	5.00	7.91	1491.7		
OBS 765	6.530	34.450	27.049	111.0	4.68	6.48	1489.1		
OBS 954	5.310	34.412	27.173	99.8	4.50	5.23	1487.3		
OBS 1151	3.940	34.413	27.325	83.9	4.34	3.85	1484.9		
OBS 1349	3.260	34.458	27.428	73.9	4.19	3.18	1485.4		
OBS 1 42	2.580	34.575	27.582	58.0	3.88	2.47	1487.7		
OBS 1938	2.380	34.681	27.671	51.3	4.09	2.22	1491.8		
OBS 2237	2.070	34.708	27.731	45.8	4.18	1.81	1495.7		
OBS 2532	1.798	34.728	27.788	42.1	4.33	1.81	1499.8		
OBS 2900	1.477	34.728	27.782	39.0	4.38	1.27	1504.8		
OBS 3184	1.388	34.723	27.798	38.8	4.39	1.15	1509.1		
OBS 3485	1.213	34.722	27.801	38.5	4.48	1.09	1514.1		
OBS 3780	1.288	34.722	27.804	38.8	4.43	1.07	1518.1		
OBS 3975	1.248	34.724	27.807	38.5	4.44	.83	1522.4		
OBS 4170	1.248	34.721	27.804	39.2	4.37	.81	1525.9		
ISL 0	10.88	34.85	26.862	134.9	5.87	10.88	1493.4	0.000	
ISL 10	10.88	34.85	26.862	135.1	5.87	10.88	1493.3	.014	
ISL 25	10.88	34.85	26.862	135.5	5.87	10.88	1493.8	.034	
ISL 50	10.90	34.85	26.860	136.3	5.99	10.88	1494.3	.068	
ISL 75	10.89	34.86	26.865	136.4	5.98	10.88	1494.6	.102	
ISL 100	10.90	34.85	26.861	137.3	5.97	10.89	1495.1	.138	
ISL 150	10.91	34.85	26.878	138.9	5.98	10.88	1495.9	.205	
ISL 200	10.92	34.85	26.877	14 0	5.98	10.88	1496.8	.275	
ISL 250	10.46	34.81	26.725	136.4	5.58	10.43	1495.8	.344	
ISL 300	10.00	34.77	26.772	132.8	5.24	9.87	1495.0	.412	
ISL 400	9.42	34.89	26.809	131.1	5.24	9.38	1494.5	.343	
ISL 500	8.66	34.61	26.866	128.8	5.28	8.61	1493.2	.871	
ISL 600	7.78	34.54	26.945	120.1	4.84	7.70	1491.3	.794	
ISL 800	6.31	34.44	27.071	109.2	4.83	6.24	1488.8	1.023	
ISL 1000	4.83	34.41	27.213	95.4	4.48	4.84	1486.5	1.229	
ISL 1500	3.41	34.44	27.403	78.4	4.23	3.31	1485.2	1.464	
ISL 2000	2.88	34.52	27.518	68.3	4.04	2.75	1486.3	1.628	
ISL 2500	2.30	34.67	27.585	50.2	4.10	2.18	1492.8	1.911	
ISL 3000	1.82	34.72	27.785	42.5	4.32	1.64	1499.2	2.111	
ISL 3500	1.44	34.72	27.783	38.9	4.38	1.22	1506.2	2.349	
ISL 4000	1.31	34.72	27.801	38.5	4.47	1.04	1514.3	2.538	
ISL 4500	1.25	34.72	27.807	38.8	4.44	.82	1522.2	2.728	

STATION 13		48.205		163.256		SEANAP2		DEPTH 4384	
DATE= 14/08/1985		TIME= 02130HT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt		CL/T	ML/L	°C	M/Sec		
OBS 0	11.040	34.871	26.868	138.2	5.99	11.04	1494.0		
OBS 25	11.050	34.871	26.868	137.0	5.97	11.05	1494.4		
OBS 51	11.070	34.878	26.867	137.8	5.98	11.06	1494.9		
OBS 77	11.060	34.878	26.868	138.0	5.95	11.05	1495.3		
OBS 103	11.080	34.878	26.870	138.5	5.95	11.05	1495.7		
OBS 133	11.080	34.800	26.868	139.8	5.95	11.06	1496.8		
OBS 20	11.090	34.883	26.868	140.8	5.97	11.06	1497.5		
OBS 303	10.180	34.794	26.764	133.7	5.14	10.12	1495.7		
OBS 503	8.510	34.585	26.871	128.3	5.22	8.48	1492.8		
OBS 683	7.310	34.498	26.978	117.7	4.70	7.24	1490.9		
OBS 878	5.810	34.428	27.125	104.2	4.42	5.73	1488.1		
OBS 1078	4.500	34.405	27.280	90.8	4.23	4.41	1486.0		
OBS 1278	3.480	34.455	27.407	78.0	4.08	3.38	1485.0		
OBS 1478	2.990	34.548	27.524	65.0	3.78	2.68	1488.3		
OBS 1775	2.570	34.620	27.620	56.2	3.75	2.44	1488.9		
OBS 2074	2.310	34.878	27.589	50.2	3.98	2.18	1493.9		
OBS 2373	2.020	34.711	27.739	45.3	4.15	1.85	1497.8		
OBS 2872	1.700	34.728	27.777	41.2	4.34	1.51	1501.8		
OBS 2950	1.527	34.719	27.783	40.4	4.38	1.31	1505.7		
OBS 3542	1.380	34.716	27.781	39.6	4.38	1.13	1511.8		
OBS 3540	1.299	34.716	27.787	38.9	4.43	1.03	1515.0		
OBS 3834	1.285	34.715	27.798	39.1	4.38	.96	1520.0		
ISL 0	11.04	34.87	26.868	138.2	5.99	11.04	1494.0	0.000	
ISL 10	11.04	34.87	26.867	138.6	5.98	11.04	1494.1	.014	
ISL 25	11.05	34.87	26.868	137.0	5.97	11.05	1494.4	.034	
ISL 50	11.07	34.88	26.867	137.8	5.98	11.06	1494.9	.068	
ISL 75	11.06	34.88	26.868	138.0	5.95	11.05	1495.3	.102	
ISL 100	11.08	34.88	26.870	138.5	5.95	11.05	1495.7	.137	
ISL 150	11.08	34.80	26.868	139.8	5.95	11.06	1496.8	.207	
ISL 200	11.09	34.88	26.868	140.8	5.97	11.06	1497.5	.277	
ISL 250	10.64	34.84	26.717	137.3	5.51	10.61	1496.8	.347	
ISL 300	10.18	34.80	26.762	133.9	5.16	10.15	1495.7	.415	
ISL 400	9.32	34.68	26.814	130.4	5.18	9.27	1494.0	.547	
ISL 500	8.53	34.59	26.889	128.4	5.22	8.48	1492.8	.675	
ISL 600	7.80	34.512	26.928	122.1	4.81	7.82	1491.8	.799	
ISL 800	6.28	34.45	27.068	109.5	4.51	6.31	1488.1	1.031	
ISL 1000	4.87	34.41	27.207	96.1	4.40	4.89	1486.6	1.237	
ISL 1500	3.40	34.47	27.423	78.5	4.02	3.30	1485.2	1.493	
ISL 2000	2.82	34.52	27.522	65.2	3.88	2.68	1488.3	1.631	
ISL 2500	2.38	34.67	27.574	51.8	4.13	2.23	1492.9	1.918	
ISL 3000	1.87	34.72	27.759	43.2	4.25	1.68	1499.4	2.158	
ISL 3500	1.51	34.72	27.784	40.3	4.36	1.29	1506.5	2.382	
ISL 4000	1.31	34.72	27.798	39.0	4.43	1.04	1514.3	2.561	



STATION 14		45-295 162-50		SEMAP 2		DEPTH 4850			
DATE 14/08/85		TIME 1400H							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	DE	POT. TEMP	S.S		
m	°C	Ppt	kg/m ³	kg/m ³	kg/m ³	°C	g/m ³		
005	0	11.190	34.864	28.651	137.9	6.00	11.19	1494.5	
005	25	11.190	34.864	28.651	136.5	6.01	11.18	1494.9	
005	51	11.180	34.862	28.651	136.0	6.01	11.17	1495.3	
005	77	11.180	34.863	28.652	136.6	5.99	11.17	1495.7	
005	102	11.190	34.891	28.657	136.8	6.00	11.18	1496.2	
005	152	11.210	34.866	28.649	141.7	5.97	11.19	1497.1	
005	201	11.150	34.893	28.665	141.2	5.99	11.12	1497.7	
005	300	9.500	34.863	28.799	130.8	5.50	9.47	1493.1	
005	500	6.500	34.579	28.655	127.8	5.55	6.53	1492.8	
005	700	7.500	34.490	28.947	121.2	4.93	7.43	1491.9	
005	900	6.110	34.428	27.087	106.6	4.57	6.03	1490.6	
005	1100	4.720	34.412	27.241	93.4	4.33	4.63	1487.3	
005	1500	3.590	34.450	27.583	77.7	4.09	3.48	1485.9	
005	1500	2.960	34.540	27.522	65.2	3.87	2.85	1486.8	
005	1800	2.540	34.617	27.620	56.2	3.68	2.41	1490.2	
005	2100	2.290	34.683	27.694	49.6	4.32	2.14	1494.3	
005	2400	2.000	34.717	27.745	44.9	4.01	1.83	1488.2	
005	2700	1.878	34.724	27.776	41.2	4.18	1.48	1502.0	
005	2919	1.507	34.725	27.789	39.5	4.35	1.29	1504.9	
005	3310	1.215	34.718	27.796	38.6	4.58	1.07	1511.0	
005	3710	1.238	34.722	27.805	38.0	4.42	.95	1517.7	
005	4110	1.185	34.718	27.806	38.3	4.42	.85	1524.5	
005	4310	1.131	34.712	27.804	38.5	4.44	.80	1527.9	
005	4510	1.134	34.713	27.806	38.6	4.42	.78	1531.4	
ISL	0	11.19	34.86	28.651	137.9	6.00	11.19	1494.5	0.000
ISL	10	11.19	34.86	28.651	136.1	6.01	11.19	1494.7	.014
ISL	15	11.19	34.86	28.651	136.5	6.01	11.19	1494.9	.035
ISL	50	11.18	34.86	28.651	136.0	6.01	11.17	1495.3	.048
ISL	75	11.18	34.86	28.652	136.6	5.99	11.17	1495.7	.104
ISL	100	11.19	34.89	28.656	139.7	6.00	11.18	1496.1	.139
ISL	150	11.21	34.89	28.649	141.6	5.96	11.19	1497.0	.209
ISL	200	11.18	34.89	28.665	141.3	5.80	11.13	1497.7	.280
ISL	250	10.23	34.78	28.734	135.4	5.54	10.20	1495.0	.349
ISL	300	9.50	34.68	28.789	130.9	5.50	9.47	1493.1	.416
ISL	400	9.06	34.63	28.819	126.8	5.53	9.02	1493.0	.546
ISL	500	8.56	34.58	28.855	127.8	5.55	8.53	1492.8	.675
ISL	600	8.08	34.53	28.889	125.2	5.21	8.02	1492.5	.801
ISL	800	6.81	34.45	27.015	115.7	4.74	6.73	1490.6	1.042
ISL	1000	5.29	34.41	27.164	101.0	4.49	5.20	1488.4	1.258
ISL	1200	3.58	34.45	27.283	77.7	4.08	3.48	1487.3	1.527
ISL	1500	2.96	34.54	27.522	65.2	3.87	2.85	1486.8	1.870
ISL	2000	2.36	34.68	27.672	51.8	4.28	2.23	1492.9	1.980
ISL	2500	1.88	34.72	27.737	43.5	4.08	1.70	1499.4	2.197
ISL	3000	1.41	34.72	27.790	38.3	4.33	1.23	1506.2	2.402
ISL	3500	1.28	34.72	27.801	38.2	4.40	1.01	1514.2	2.598
ISL	4000	1.20	34.72	27.806	38.1	4.42	.88	1522.7	2.787
ISL	4500	1.13	34.71	27.806	38.6	4.42	.78	1531.3	2.979



Cruise RANRL 3/85*Notes for cruise RANRL 3/86*

This was a single station taken during a cruise which deployed a current meter on the Lord Howe Rise. The current meter was not recovered. The station position is plotted on page 98.

Additional Nansen data for cruise RANRL 3/86

DEPTH (m)	T	S	
93	18.32	-	Station 1

(The salinity sample bottle had no seal in the cap)

Other sources of data for cruise RANRL 3/86

This station was used to make a comparison with a temperature measurement at the same site in 1838.

See Jones, J.E. and Jones, Ian S.F. (1988)

"Physical Oceanography in the Oceans around Australia before 1850".

Deutsche Hydrographische Zeitschrift

Scott, B.D. (1986)

"RAN Research Laboratory Oceanographic Cruise Report for RANRL 3/86".

(Unpublished document). A narrative of the actual cruise.

Cruise RANRL 6/86*Notes for cruise RANRL 6/86*

A single station was taken while repairs were being made to the CTD on HMAS Cook. This cruise was also known as RANRL 14/85. The position of the station is plotted on page 98.

Additional Nansen data for cruise RANRL 6/86

DEPTH (m)	T	S
?	6.09	34.469

Also note that the depth in the tables of 709 m is uncertain and could be as low as 688 m (699 ± 10 m).

Other sources of data for cruise RANRL 6/86

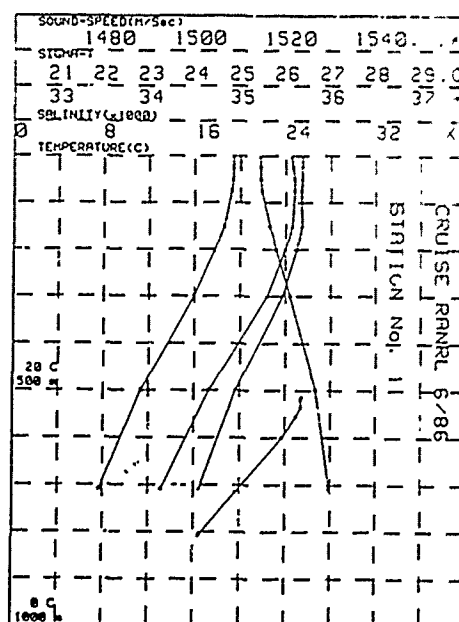
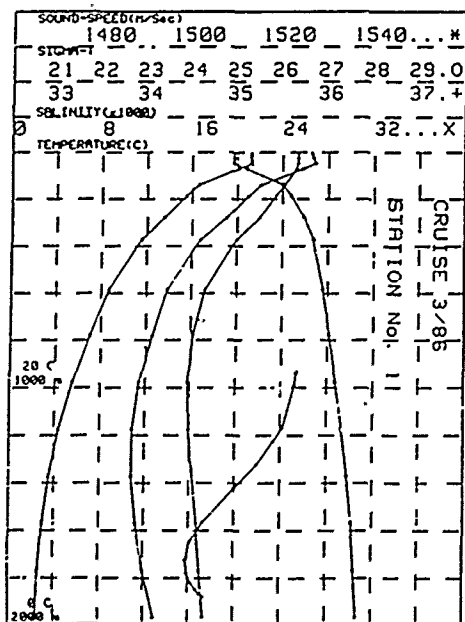
Scott, B.D. (1986)

"Physical Oceanography of the Northern Tasman Sea and Tests of Geoacoustical Equipment (ADOBE)".

RANRL Experimental Report No.14/85. HMAS Cook, 13 to 22 September 1986. A narrative of the actual cruise.

STATION 1 DATE 01/09/86									
TIME 013000H									
DEPTH 2500									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL	POT-TEMP	S.S	DYN	
m	°C	Ppt	CL/T	ML/L	°C	Ppt	ML/Sec		
0	21.280	35.673	24.931	301.3	0.00	21.28	1526.3		
05	21.270	35.672	24.933	302.1	0.00	21.27	1526.7		
10	21.260	35.673	24.937	303.3	0.00	21.26	1527.2		
15	20.150	35.653	25.221	278.2	0.00	20.15	1524.5		
20	19.600	35.526	26.014	202.8	0.00	19.60	1519.3		
25	19.500	35.428	26.191	187.2	0.00	19.47	1512.6		
30	19.530	35.232	26.481	181.7	0.00	19.49	1507.5		
35	19.510	34.996	26.879	164.2	0.00	19.48	1501.9		
40	19.480	34.655	26.899	125.3	0.00	19.42	1494.7		
45	19.480	34.522	27.037	113.3	0.00	19.46	1491.4		
50	19.530	34.473	27.182	96.5	0.00	19.48	1488.7		
55	19.530	34.490	27.338	84.1	0.00	19.50	1487.2		
60	19.530	34.536	27.462	71.9	0.00	19.48	1487.1		
65	19.590	34.589	27.556	62.4	0.00	19.47	1486.1		
70	19.610	34.630	27.625	55.9	0.00	19.46	1486.0		
75	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
80	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
85	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
90	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
95	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
100	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
105	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
110	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
115	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
120	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
125	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
130	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
135	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
140	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
145	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		
150	19.610	34.670	27.678	51.2	0.00	19.46	1485.4		

STATION 1 DATE 01/09/86									
TIME 0115 01H									
DEPTH 2200									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL	POT-TEMP	S.S	DYN	
m	°C	Ppt	CL/T	ML/L	°C	Ppt	ML/Sec		
0	19.419	35.469	25.446	252.5	0.00	19.40	1521.2		
05	19.358	35.480	25.458	252.8	0.00	19.38	1521.5		
10	19.378	35.466	25.451	253.6	0.00	19.34	1522.2		
15	19.228	35.475	25.479	251.8	0.00	19.22	1522.8		
20	18.578	35.482	25.489	238.6	0.00	18.55	1521.5		
25	17.758	35.427	25.683	224.9	0.00	17.75	1520.8		
30	15.978	35.466	26.111	198.4	0.00	15.94	1516.3		
35	11.358	34.758	26.872	147.7	0.00	11.32	1503.5		
40	7.658	34.581	26.975	119.8	0.00	7.62	1492.8		
45	19.46	35.47	25.446	252.5	0.00	19.40	1521.2		
50	19.37	35.47	25.448	252.5	0.00	19.37	1521.4		
55	19.38	35.47	25.458	252.8	0.00	19.38	1521.6		
60	19.37	35.47	25.451	253.6	0.00	19.34	1522.2		
65	19.24	35.48	25.478	251.9	0.00	19.22	1522.8		
70	19.18	35.48	25.524	248.4	0.00	19.18	1521.9		
75	18.62	35.48	25.543	238.9	0.00	18.59	1521.5		
80	17.84	35.43	25.776	225.7	0.00	17.81	1520.1		
85	16.97	35.54	25.954	212.1	0.00	16.92	1518.2		
90	16.81	35.47	26.168	199.7	0.00	16.76	1516.8		
95	13.25	35.28	26.425	178.2	0.00	13.19	1517.4		
100	11.24	34.95	26.574	147.5	0.00	11.20	1503.4		
105	9.15	34.75	26.623	128.6	0.00	9.10	1499.8		



Cruise RANRL 1/87

Notes for cruise RANRL 1/87

Twenty-one oceanographic stations were occupied, with Nansen bottles strung on the same wire as the CTD, to obtain continuous temperature profiles, and discrete salinity values. This procedure was employed to try to obtain an indirect salinity calibration for the CTD conductivity. The strumming of the thicker than usual wire caused many failures or partial failures of the Nansen bottles. A good conductivity calibration was obtained since it takes the form of a linear adjustment of the form $y = mx + c$, where m (slope) and c (constant) are fixed. The procedure of stringing Nansen bottles on the CTD wire was successful for only one in three bottles on average, with many deep bottles pre-tripping. This led to many additional incomplete Nansen bottle sets, with such sets not being included in the tables.

A T-S polynomial was fitted to good Nansen data sets and used to find missing T and S values for the Nansen data. These interpolated values are not included in the tables of Nansen data, but they are included in the plots.

The T-S polynomial found was:

$$S = a + bt + ct^2 + dt^3 + et^4 + ft^5 + gt^6$$

where

$$a = 3.45284 \times 10$$

$$b = 2.51311 \times 0.1$$

$$c = -1.288838 \times 0.1$$

$$d = 2.259455 \times 0.01$$

$$e = -1.726492 \times 0.001$$

$$f = 6.187096 \times 10^{-5}$$

$$g = -8.566285 \times 10^{-7}$$

Range 2.5 to 19.5°C

Standard error of estimate of 0.02053 PSU.

Additional Nansen data for cruise RANRL 1/87

Only one Nansen bottle was used at station one, a test CTD station. The surface values shown for station one are from a surface bucket salinity sample, and stem thermometer. The station number was retained to coincide with the CTD measurements made concurrently. Values in brackets shown below are calculated from the T-S polynomial, or taken from the CTD value. Unbracketed values are good Nansen bottle values.

DEPTH (m)	T	S	
890	(8.19)	34.607	Station 5
1088	(5.11)	34.485	
2077	(2.31)	34.679	
1740	2.55	(34.64)	Station 7
900	(6.50)	34.493	Station 10
102	21.14	-	Station 11 Many salinity samples were lost for stations 11 and 12 when the bottom fell out of a sample box.
150	20.82	-	
200	18.74	(35.64)	
300	15.88	(35.45)	
698	8.57	(34.65)	
1084	5.19	(34.48)	
1284	4.13	(34.53)	
1482	3.491	(34.57)	
1578	3.192	(34.59)	

DEPTH (m)	T	S	
26	21.98	(35.587)	Station 12
52	21.98	(35.587)	In mixed layer.
102	21.48	-	
150	19.30	(35.66)	
200	18.17	(35.61)	
300	15.17	(35.39)	
453	11.72	(35.03)	
632	8.66	(34.66)	
995	5.76	(34.48)	
932	5.87	(34.48)	Station 13
892	(6.79)	34.505	Station 17
1553	3.256	(34.59)	Station 18
25?	20.12	35.746	Station 19
50?	20.10	35.747	In mixed layer.
75?	20.12	35.749	
2031	2.138	-	Station20

Any work on the data set is best done with a combination of the Nansen, T-S polynomial, and CTD data, as the CTD also suffered conductivity failures at some stations. This approach yielded good results.

Other sources of data for cruise RANRL 1/87

Mulhearn, P.J., Hamilton, L.J., and Scott, B.D. (1989)
 "Deep Structure of the East Australian Current and Tasman Front".
 WSRL Tech. Memo. 7/89.

Scott, B.D. (1987)
 "RAN Research Laboratory Oceanographic Cruise report for RANRL 1/87".
 (Unpublished document). A narrative of the actual cruise.

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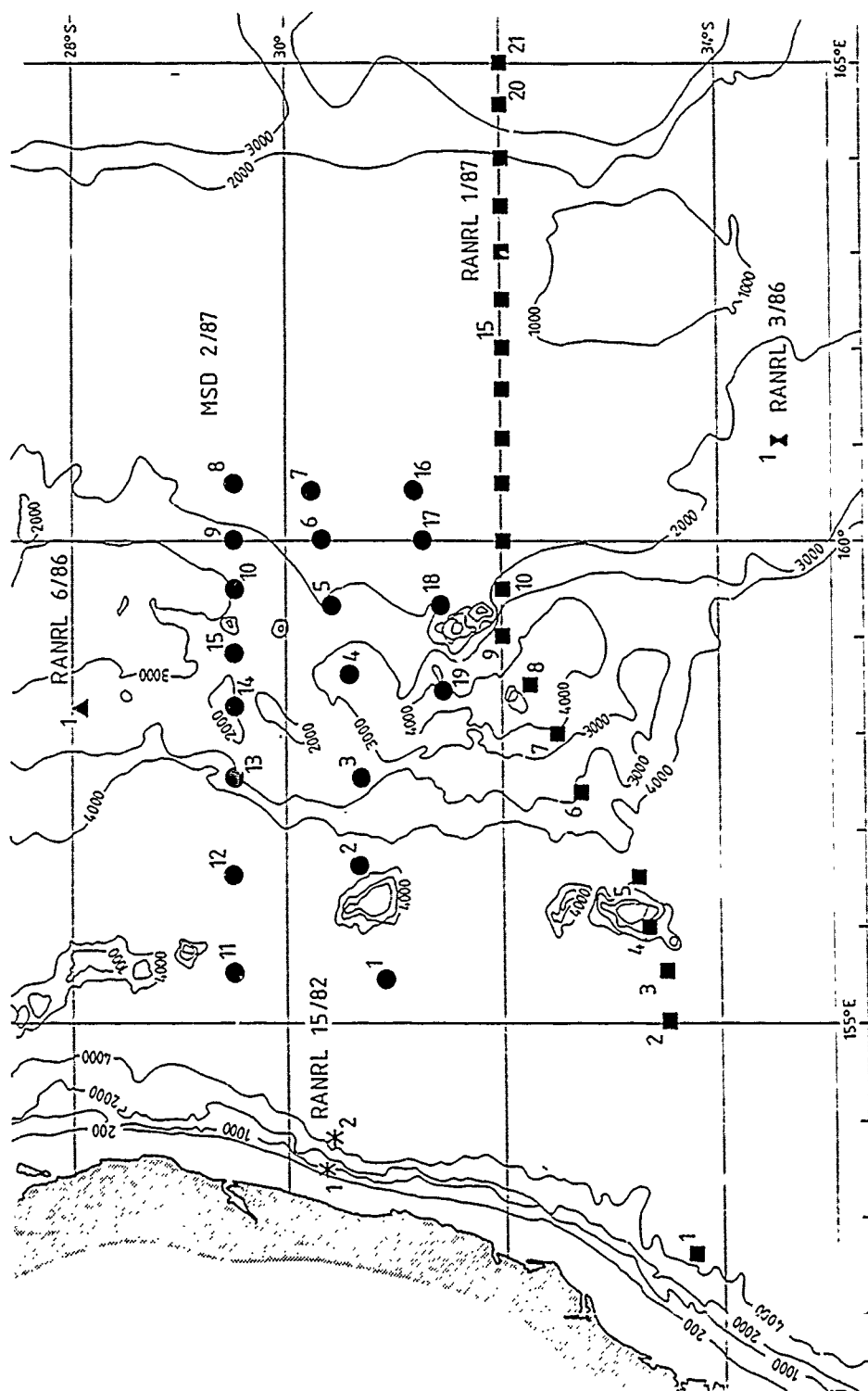


Figure 24. Nansen station positions for survey RANRL 1/87

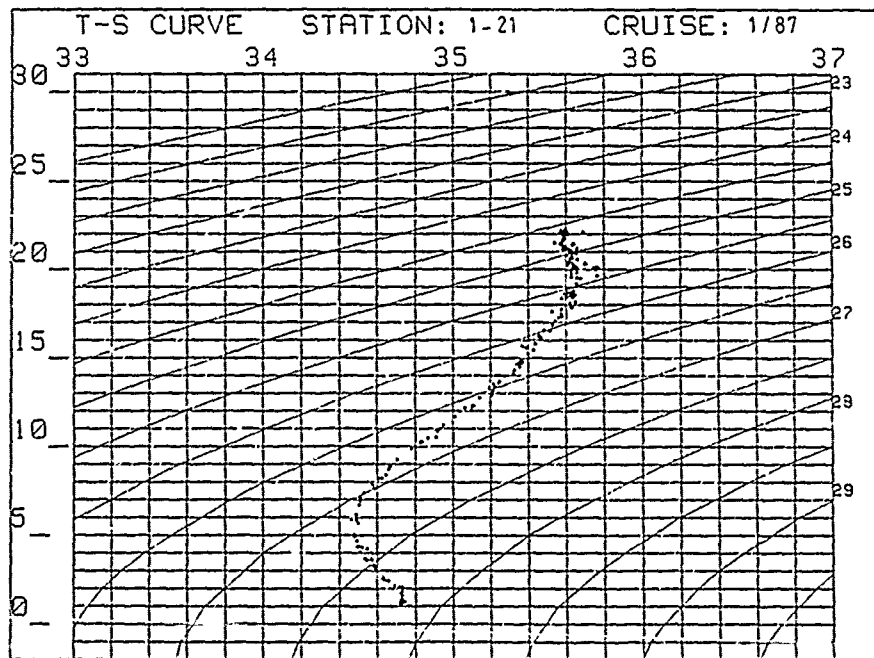
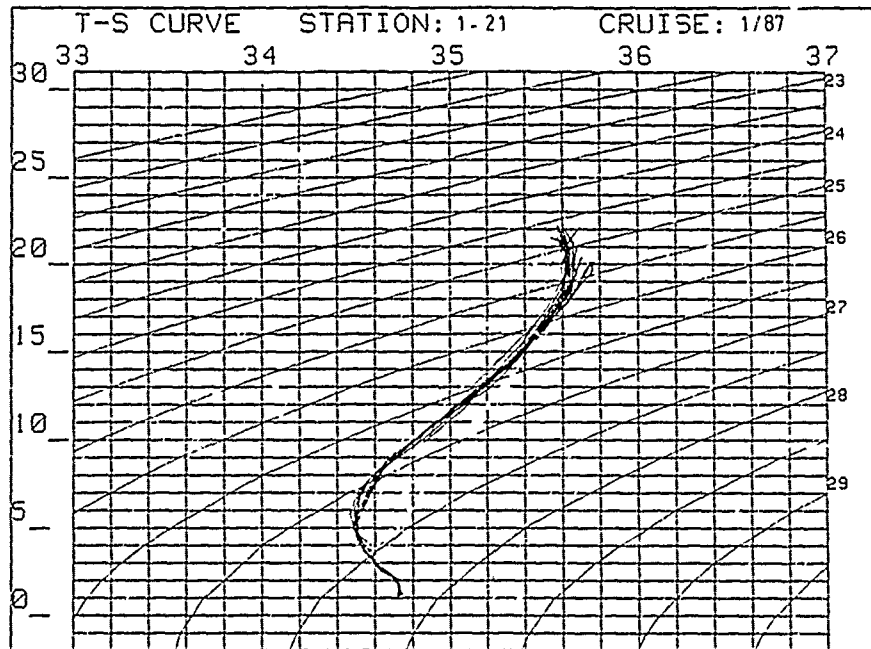


Figure 25. Temperature-salinity curves and scatter plot for cruise RANRL 1/87

STATION 1
DATE= 25/05/1987 33.463 152.346
TIME= 0730 GHT
RAWRL 1/87
DEPTH= 4500

DEPTH m	TEMP °C	SALINITY Pct	SIGMA-T	A.S.V CL/T	OX ML/L	POT.TEMP °C	S.S M/Sec	Dyn. m
088 1186	19.030	34.481	27.200	83.3	0.00	4.83	1490.1	

STATION 2
DATE= 26/05/87 33.225 155.036
TIME= 0425 GHT
RAWRL 1/87
DEPTH= 4850

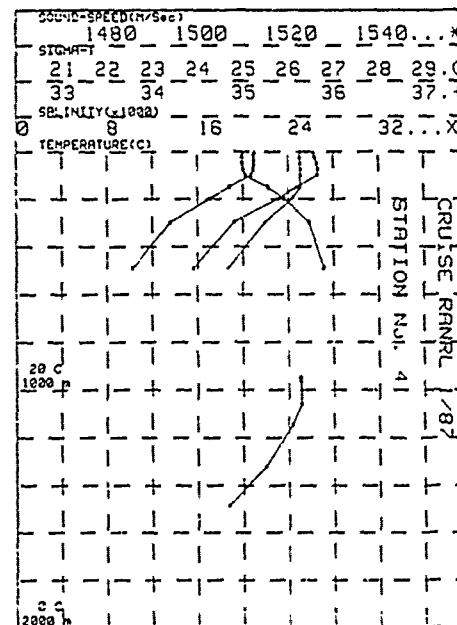
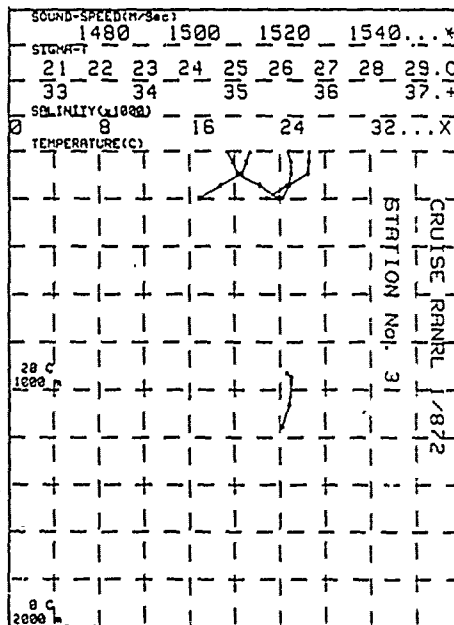
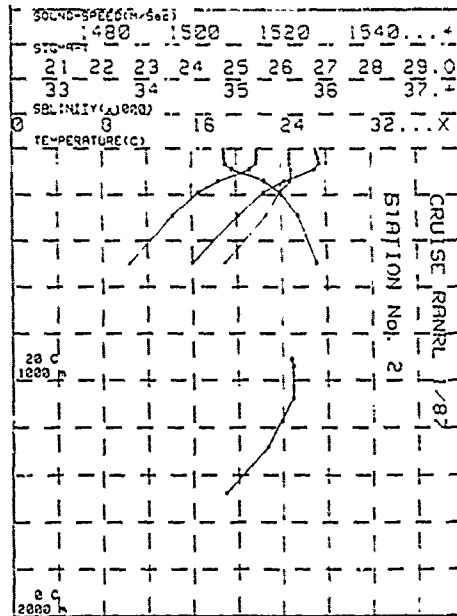
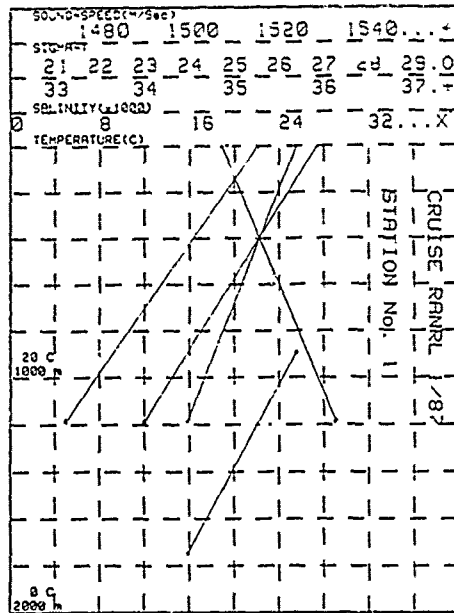
DEPTH m	TEMP °C	SALINITY Pct	SIGMA-T	A.S.V CL/T	OX ML/L	POT.TEMP °C	S.S M/Sec	Dyn. m
088 0	21.810	35.396	24.725	320.9	0.00	21.81	1527.6	0.000
088 22	21.780	35.396	24.734	320.9	0.00	21.78	1527.8	.032
088 43	21.770	35.394	24.735	321.6	0.00	21.76	1528.2	.040
088 66	21.689	35.395	24.758	320.3	0.00	21.68	1528.4	.181
088 83	21.180	35.617	24.821	309.7	0.00	21.18	1527.5	.241
088 143	18.450	35.610	25.828	299.8	0.00	18.42	1525.9	.318
088 183	16.370	35.443	25.986	297.0	0.00	16.34	1518.0	.450
088 283	14.310	35.329	26.378	172.3	0.00	14.27	1510.4	.599
088 486	10.450	34.866	26.770	137.8	0.00	10.38	1500.0	.608
ISL 0	21.81	35.60	24.725	320.9	0.00	21.81	1527.6	0.000
ISL 10	21.79	35.60	24.730	320.9	0.00	21.79	1527.8	.032
ISL 25	21.78	35.60	24.734	321.1	0.00	21.77	1528.0	.040
ISL 50	21.75	35.59	24.742	321.2	0.00	21.74	1528.4	.181
ISL 75	21.60	35.60	24.781	317.4	0.00	21.58	1528.3	.241
ISL 100	20.73	35.62	25.041	294.5	0.00	20.71	1526.5	.318
ISL 150	18.18	35.59	25.686	154.8	0.00	18.15	1520.1	.450
ISL 200	16.40	35.47	25.919	204.1	0.00	16.37	1515.8	.599
ISL 250	15.23	35.40	26.225	186.6	0.00	15.21	1512.8	.637
ISL 300	14.16	35.32	26.398	170.3	0.00	14.12	1510.0	.748
ISL 400	12.17	35.11	26.648	148.1	0.00	12.11	1504.8	.808

STATION 3
DATE= 26/05/87 33.285 155.326
TIME= 0705 GHT
RAWRL 1/87
DEPTH= 4880

DEPTH m	TEMP °C	SALINITY Pct	SIGMA-T	A.S.V CL/T	OX ML/L	POT.TEMP °C	S.S M/Sec	Dyn. m
088 0	21.370	35.583	24.838	310.2	0.00	21.37	1526.5	0.000
088 45	21.080	35.628	24.857	300.3	0.00	21.05	1526.5	.031
088 85	20.650	35.637	25.068	291.8	0.00	20.63	1526.2	.077
088 145	18.720	35.608	25.559	248.6	0.00	18.69	1521.7	.152
088 199	16.880	35.528	25.954	210.4	0.00	16.83	1517.0	.227
ISL 0	21.37	35.58	24.838	310.2	0.00	21.37	1526.5	0.000
ISL 10	21.31	35.60	24.848	307.9	0.00	21.30	1526.5	.031
ISL 25	21.20	35.61	24.906	304.6	0.00	21.20	1526.5	.077
ISL 50	21.02	35.63	24.946	298.6	0.00	21.01	1526.4	.152
ISL 75	20.81	35.63	25.023	295.3	0.00	20.80	1526.3	.227
ISL 100	20.45	35.63	25.122	286.7	0.00	20.43	1525.7	.300
ISL 150	18.34	35.60	25.601	242.7	0.00	18.31	1521.2	.432

STATION 4
DATE= 26/05/87 33.215 156.016
TIME= 0229 GHT
RAWRL 1/87
DEPTH= 1820

DEPTH m	TEMP °C	SALINITY Pct	SIGMA-T	A.S.V CL/T	OX ML/L	POT.TEMP °C	S.S M/Sec	Dyn. m
088 0	21.010	35.630	24.972	297.4	0.00	21.01	1525.8	0.000
088 25	20.980	35.632	24.980	297.8	0.00	20.98	1525.8	.030
088 50	21.000	35.637	24.980	296.5	0.00	20.99	1526.4	.074
088 75	20.930	35.639	25.001	297.4	0.00	20.92	1526.8	.149
088 100	20.770	35.637	25.056	293.0	0.00	20.70	1526.5	.223
088 150	19.790	35.642	25.587	246.0	0.00	19.76	1522.0	.297
088 199	17.090	35.544	25.911	214.3	0.00	17.05	1517.7	.432
088 299	13.570	35.245	26.487	163.5	0.00	13.53	1506.0	.547
088 481	10.240	34.835	26.782	134.1	0.00	10.16	1499.1	.646
ISL 0	21.01	35.63	24.972	297.4	0.00	21.01	1525.8	0.000
ISL 10	21.00	35.63	24.978	297.5	0.00	21.00	1525.7	.030
ISL 25	20.98	35.63	24.980	297.6	0.00	20.98	1525.9	.074
ISL 50	21.00	35.64	24.980	296.5	0.00	20.99	1526.4	.149
ISL 75	20.93	35.64	25.001	297.4	0.00	20.92	1526.8	.223
ISL 100	20.72	35.64	25.056	293.0	0.00	20.70	1526.5	.297
ISL 150	18.79	35.64	25.587	246.0	0.00	18.76	1522.0	.432
ISL 200	17.05	35.54	25.918	213.9	0.00	17.02	1517.8	.547
ISL 250	15.14	35.38	26.228	185.4	0.00	15.10	1511.3	.646
ISL 300	13.54	35.24	26.471	163.1	0.00	13.50	1507.8	.735
ISL 400	11.26	35.00	26.756	137.5	0.00	11.28	1501.7	.882

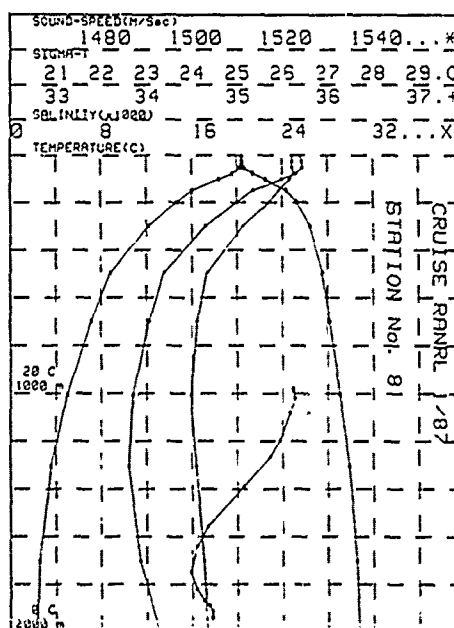
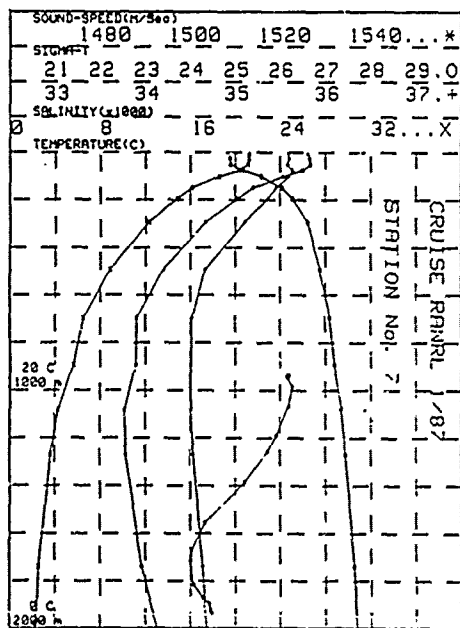
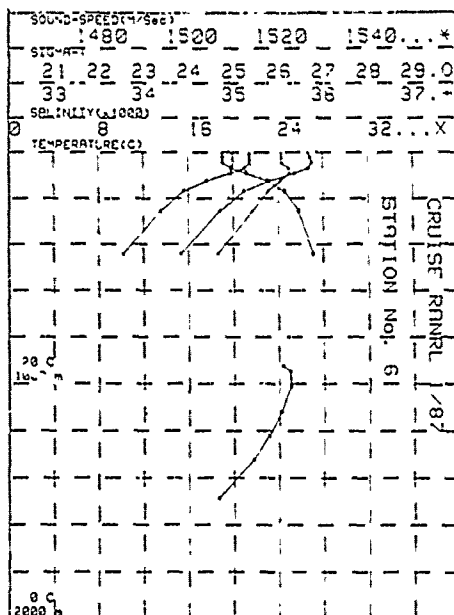
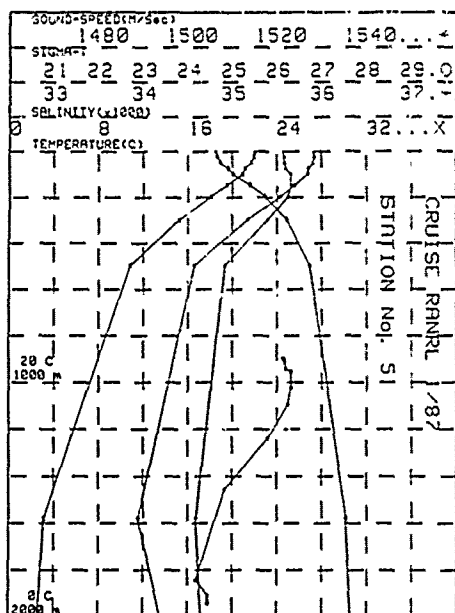


STATION 5 DATE= 27/05/87										32.158 156.306 TIME= 0246 GHT									
										RAWEL 1/87 DEPTH 4450									
DEPTH	TDP	SALINITY	SIGMA-T	A.S.V	CL/T	DEPT	POT.TDP	S.S	Dyn #	DEPTH	TDP	SALINITY	SIGMA-T	A.S.V	CL/T	DEPT	POT.TDP	S.S	Dyn #
0	22.050	35.198	24.638	329.3	0.00	22.05	1528.2	0.000		0	21.500	35.543	24.771	316.5	0.00	21.50	1528.8	0.000	
25	21.970	35.583	24.672	329.9	0.00	21.97	1528.4	0.000		25	21.500	35.543	24.771	317.4	0.00	21.50	1528.8	0.000	
50	21.730	35.589	24.742	321.1	0.00	21.72	1528.2	0.000		50	21.500	35.545	24.773	318.1	0.00	21.49	1527.5	0.000	
75	21.140	35.601	24.815	305.6	0.00	21.13	1527.1	0.000		75	21.040	35.423	24.659	301.3	0.00	21.03	1526.6	0.000	
100	20.900	35.600	25.025	296.0	0.00	20.88	1527.0	0.000		100	19.760	35.430	25.307	296.8	0.00	19.74	1523.7	0.000	
125	19.520	35.640	25.293	282.8	0.00	19.49	1524.0	0.000		125	17.610	35.525	25.771	225.6	0.00	17.59	1518.1	0.000	
150	18.090	35.624	25.725	232.1	0.00	17.06	1520.7	0.000		150	15.370	35.260	26.146	190.9	0.00	15.34	1512.4	0.000	
175	15.230	35.597	26.228	186.9	0.00	15.12	1513.5	0.000		175	13.510	35.217	26.456	153.2	0.00	13.47	1507.0	0.000	
200	14.650	34.917	26.758	140.9	0.00	13.79	1501.5	0.000		200	12.230	34.827	26.776	125.8	0.00	12.18	1494.3	0.000	
225	13.130	34.912	27.547	84.0	0.00	13.01	1486.9	0.000		225	10.210	35.41	26.429	97.4	0.00	10.19	1472.3	0.000	
250	11.430	34.729	27.768	42.5	0.00	11.44	1500.4	0.000		250	8.210	35.54	24.771	316.5	0.00	8.19	1450.8	0.000	
275	10.000	34.729	27.800	38.2	0.00	10.17	1501.1	0.000		275	6.210	35.54	24.771	317.4	0.00	6.19	1428.8	0.000	
300	8.800	34.734	27.817	36.3	0.00	8.84	1514.9	0.000		300	4.210	35.53	24.787	318.0	0.00	4.18	1406.8	0.000	
325	7.800	34.729	27.815	36.9	0.00	7.82	1523.3	0.000		325	2.210	35.63	25.041	293.6	0.00	2.19	1384.8	0.000	
350	6.800	34.729	27.812	36.8	0.00	6.80	1532.3	0.000		350	0.210	35.61	25.429	257.4	0.00	0.19	1362.8	0.000	

STATION 6 DATE= 28/05/87										32.435 157.236 TIME= 0901 GHT									
										RAWEL 1/87 DEPTH 3280									
DEPTH	TDP	SALINITY	SIGMA-T	A.S.V	CL/T	DEPT	POT.TDP	S.S	Dyn #	DEPTH	TDP	SALINITY	SIGMA-T	A.S.V	CL/T	DEPT	POT.TDP	S.S	Dyn #
0	21.500	35.543	24.771	316.5	0.00	21.50	1528.8	0.000		0	21.500	35.543	24.771	316.5	0.00	21.50	1528.8	0.000	
25	21.500	35.543	24.771	317.4	0.00	21.50	1528.8	0.000		25	21.500	35.543	24.771	317.4	0.00	21.50	1528.8	0.000	
50	21.500	35.545	24.773	318.1	0.00	21.49	1527.5	0.000		50	21.500	35.545	24.773	318.1	0.00	21.49	1527.5	0.000	
75	21.040	35.423	24.659	301.3	0.00	21.03	1526.6	0.000		75	21.040	35.423	24.659	301.3	0.00	21.03	1526.6	0.000	
100	19.760	35.430	25.307	296.8	0.00	19.74	1523.7	0.000		100	19.760	35.430	25.307	296.8	0.00	19.74	1523.7	0.000	
125	17.610	35.525	25.771	225.6	0.00	17.59	1518.1	0.000		125	17.610	35.525	25.771	225.6	0.00	17.59	1518.1	0.000	
150	15.370	35.260	26.146	190.9	0.00	15.34	1512.4	0.000		150	15.370	35.260	26.146	190.9	0.00	15.34	1512.4	0.000	
175	13.510	35.217	26.456	153.2	0.00	13.47	1507.0	0.000		175	13.510	35.217	26.456	153.2	0.00	13.47	1507.0	0.000	
200	12.230	34.827	26.776	125.8	0.00	12.18	1494.3	0.000		200	12.230	34.827	26.776	125.8	0.00	12.18	1494.3	0.000	
225	10.210	35.41	26.429	97.4	0.00	10.19	1472.3	0.000		225	10.210	35.41	26.429	97.4	0.00	10.19	1472.3	0.000	
250	8.210	35.54	24.771	316.5	0.00	8.19	1450.8	0.000		250	8.210	35.54	24.771	316.5	0.00	8.19	1450.8	0.000	
275	6.210	35.54	24.771	317.4	0.00	6.19	1428.8	0.000		275	6.210	35.54	24.771	317.4	0.00	6.19	1428.8	0.000	
300	4.210	35.53	24.787	318.0	0.00	4.18	1406.8	0.000		300	4.210	35.53	24.787	318.0	0.00	4.18	1406.8	0.000	
325	2.210	35.63	25.041	293.6	0.00	2.19	1384.8	0.000		325	2.210	35.63	25.041	293.6	0.00	2.19	1384.8	0.000	
350	0.210	35.61	25.429	257.4	0.00	0.19	1362.8	0.000		350	0.210	35.61	25.429	257.4	0.00	0.19	1362.8	0.000	

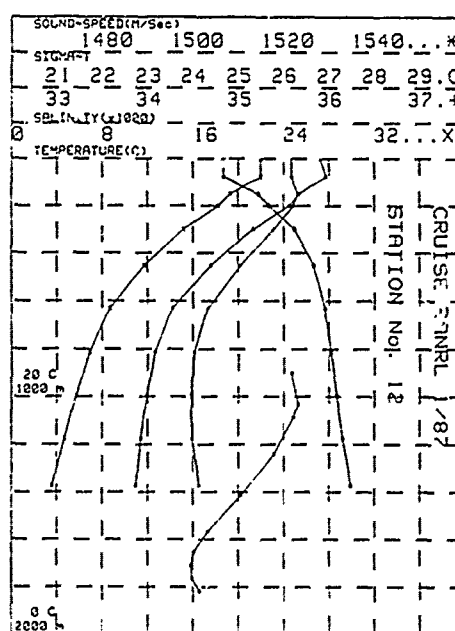
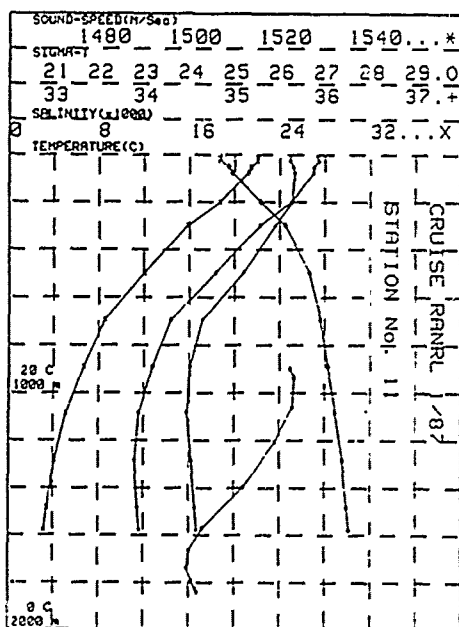
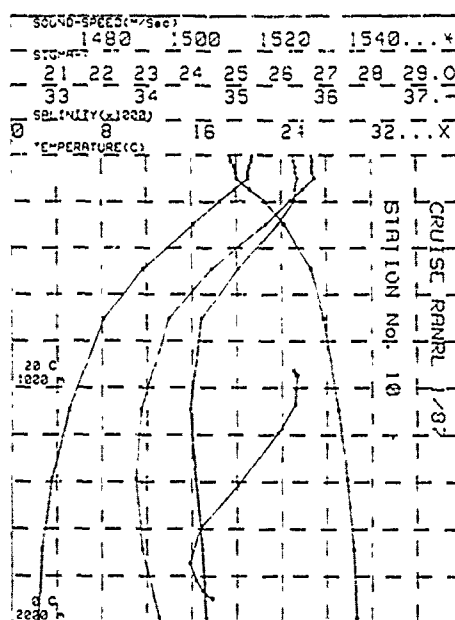
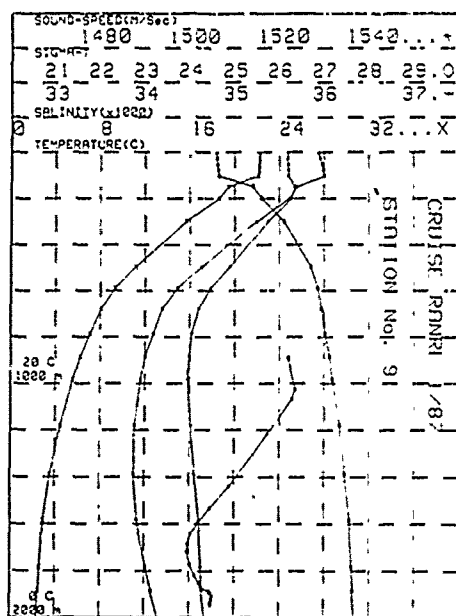
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										RAWEL 1/87 DEPTH 3390									
DEPTH	TDP	SALINITY	SIGMA-T	A.S.V	CL/T	DEPT	POT.TDP	S.S	Dyn #	DEPTH	TDP	SALINITY	SIGMA-T	A.S.V	CL/T	DEPT	POT.TDP	S.S	Dyn #
0	21.260	35.593	24.676	306.8	0.00	21.26	1529.2	0.000		0	21.260	35.593	24.676	306.8	0.00	21.26	1529.2	0.000	
25	21.140	35.605	24.690	306.1	0.00	21.14	1528.9	0.000		25	21.140	35.605	24.690	306.1	0.00	21.14	1528.9	0.000	
50	21.140	35.584	24.902	306.0	0.00	21.13	1528.7	0.000		50	21.140	35.584	24.902	306.0	0.00	21.13	1528.7	0.000	
75	20.700	35.640	25.172	281.2	0.00	20.70	1524.9	0.000		75	20.700	35.640	25.172	281.2	0.00	20.70	1524.9	0.000	
100	16.190	35.591	25.578	243.2	0.00	16.17	1520.8	0.000		100	16.190	35.591	25.578	243.2	0.00	16.17	1520.8	0.000	
125	15.180	35.571	26.059	196.8	0.00	15.16	1514.4	0.000		125	15.180	35.571	26.059	196.8	0.00	15.16	1514.4	0.000	
150	14.640	35.581	26.288	178.2	0.00	14.61	1510.5	0.000		150	14.640	35.581	26.288	178.2	0.00	14.61	1510.5	0.000	
175	12.280	35.104	26.618	148.6	0.00	12.24	1503.4	0.000		175	12.280	35.104	26.618	148.6	0.00	12.24	1503.4	0.000	
200	10.870	34.685	26.877	125.9	0.00	10.82	1493.9	0.000		200	10.870	34.685	26.877	125.9	0.00	10.82	1493.9	0.000	
225	9.640	34.504	27.201	97.0	0.00	9.60	1487.9	0.000		225	9.640	34.504	27.201	97.0	0.00	9.60	1487.9	0.000	
250	8.450	34.509	27.318	61.3	0.00	8.42	1481.5	0.000		250	8.450	34.509	27.318	61.3	0.00	8.42	1481.5	0.000	
275	7.850	34.536	27.453	72.0	0.00	7.82	1485.8	0.000		275	7.850	34.536	27.453	72.0	0.00	7.82	1485.8	0.000	
300	7.200	34.718	27.738	45.3	0.00	7.16	1489.4	0.000		300	7.200	34.718	27.738	45.3	0.00	7.16	1489.4	0.000	
325	6.990	34.729	27.786	36.7	0.00	6.94	1501.4	0.000		325	6.990	34.729	27.786	36.7	0.00	6.94	1501.4	0.000	
350	6.170	34.742	27.822	35.2	0.00	6.10	1506.2	0.000		350	6.170	34.742	27.822	35.2	0.00	6.10	1506.2	0.000	

STATION 8		32.145		158.31E		RAWEL 1/87		DEPTH 3950	
DATE= 29/05/87		TIME= 0348 GHT							
DEPTH	TDP	SALINITY	SIGMA-T	A.S.V	CL/T	DEPT	POT.TDP	S.S	Dyn #
m		Ppt				M/L	HC	M/Side	
008	0	20.420	35.613	25.119	283.5	0.00	20.42	1524.0	
017	0	20.400	35.613	25.124	283.9	0.00	20.39	1524.4	
054	20	20.280	35.611	25.100	281.5	0.00	20.25	1524.4	
085	78	19.580	35.630	25.354	283.8	0.00	19.57	1523.0	
103	130	18.250	35.581	25.631	238.2	0.00	18.23	1519.9	
150	150	16.040	35.464	26.098	195.0	0.00	16.02	1513.7	
190	190	14.680	35.361	26.321	175.0	0.00	14.66	1507.5	
300	300	12.180	35.064	26.810	149.3	0.00	12.12	1502.0	
497	497	8.840	34.684	26.884	125.2	0.00	8.79	1483.8	
1007	1007	5.000	34.440	27.246	90.7	0.00	4.92	1487.0	
1205	1205	3.370	34.547	27.460	70.8	0.00	3.30	1487.0	
1753	1753	2.570	34.430	27.628	55.5	0.00	2.45	1486.4	
2201	2201	2.150	34.091	27.712	47.9	0.00	1.99	1495.4	
2994	2994	1.730	34.723	27.771	42.0	0.00	1.33	1502.1	
3195	3195	1.320	34.770	27.758	38.0	0.00	1.03	1509.0	
3680	3680	1.180	34.718	27.719	37.1	0.00	0.79	1512.5	
4185	4185	1.130	34.720	27.812	37.4	0.00	0.79	1525.5	
152	0	20.42	35.61	25.119	283.5	0.00	20.42	1524.0	0.000
15	20	20.41	35.61	25.121	283.6	0.00	20.41	1524.2	0.014
25	20	20.40	35.61	25.124	283.9	0.00	20.39	1524.4	0.014
50	20	20.32	35.61	25.123	283.5	0.00	20.31	1524.4	0.142
75	19	19.08	35.63	25.326	284.4	0.00	19.68	1523.3	0.278
100	19	18.25	35.59	25.599	241.2	0.00	18.48	1520.3	0.214
125	18	18.04	35.47	26.096	196.0	0.00	17.99	1513.7	0.161
150	20	16.85	35.38	26.325	174.9	0.00	16.42	1512.0	0.470
152	230	13.34	35.28	26.840	180.7	0.00	13.30	1508.3	0.585
300	300	12.16	35.07	26.810	149.3	0.00	12.12	1503.0	0.631
1500	1500	10.35	34.69	26.758	125.2	0.00	10.30	1497.9	0.769
1500	1500	8.81	34.67	26.811	122.0	0.00	8.76	1498.1	1.024
800	800	7.82	34.80	26.966	118.2	0.00	7.68	1491.9	1.036
800	800	6.35	34.51	27.118	104.7	0.00	6.27	1486.8	1.253
1090	1090	5.04	34.48	27.261	91.2	0.00	4.94	1487.0	1.430
1300	1300	3.58	34.58	27.417	72.0	0.00	3.48	1487.0	1.606
1500	1500	3.01	34.59	27.557	62.0	0.00	2.90	1487.0	1.832
2000	2000	2.32	34.47	27.661	50.6	0.00	2.18	1482.6	2.164
2500	2500	1.90	34.71	27.751	44.1	0.09	1.71	1496.4	2.307
3000	3000	1.45	34.74	27.790	39.0	0.00	1.23	1506.1	2.345
3500	3500	1.21	34.72	27.819	37.3	0.00	0.92	1514.5	2.345
4000	4000	1.12	34.72	27.891	37.3	0.08	0.82	1522.3	2.929



STATION 10		32.005		154.296		RANGL 1/87		DEPTH 2340			
DATE 30/05/87		TIME = 0725 QZT									
DEPTH	TOW	SALINITY	SIGMA-T	A.S.V.	CL, F	OC	POT, TSWP	S.S			
MC	Pos							kg/m ³			Dyn =
005	0	21.450	35.437	24.837	308.4	0.00	21.45	1528.7			
005	28	21.380	35.439	24.878	307.0	0.00	21.37	1527.0			
005	51	21.170	35.460	24.933	301.3	0.00	21.16	1528.8			
005	78	21.030	35.457	24.961	300.0	0.00	21.02	1529.5			
005	101	21.040	35.461	25.003	296.0	0.00	21.02	1527.4			
005	150	19.830	35.459	25.211	270.3	0.00	19.80	1524.9			
005	194	18.620	35.450	25.341	240.5	0.00	18.48	1522.9			
005	220	17.850	35.441	25.062	240.0	0.00	18.64	1519.5			
005	293	11.660	35.013	24.844	144.5	0.00	11.00	1504.0			
005	705	6.200	34.904	20.933	123.5	0.00	6.13	1494.8			
005	1095	5.070	34.480	20.729	92.9	0.00	4.96	1486.7			
005	1390	4.750	34.517	20.408	71.0	0.00	4.71	1478.9			
005	1646	2.740	34.421	20.768	57.0	0.00	2.62	1460.1			
005	1940	2.407	34.459	20.753	42.4	0.00	2.26	1452.7			
005	2374	2.041	34.731	21.745	53.8	0.00	1.68	1496.2			
ISL	0	21.45	35.64	24.837	308.4	5.00	21.45	1528.7	0.0000		
ISL	10	21.44	35.64	24.854	309.0	0.00	21.44	1526.9	0.0001		
ISL	25	21.29	35.64	24.878	307.0	0.00	21.28	1527.0	0.077		
ISL	50	21.13	35.64	24.949	301.5	0.00	21.17	1528.9	0.078		
ISL	75	21.03	35.64	24.968	300.0	0.00	21.02	1529.5	0.128		
ISL	100	21.04	35.64	25.000	296.0	0.00	21.02	1527.4	0.043		
ISL	150	19.83	35.64	25.211	270.3	0.00	19.80	1524.9	0.069		
ISL	200	18.62	35.49	25.062	270.7	0.00	18.44	1521.9	0.313		
ISL	250	18.02	35.48	25.067	269.0	0.00	17.75	1517.1	0.353		
ISL	300	16.13	35.45	24.856	292.8	0.00	16.10	1513.5	0.784		
ISL	400	13.67	35.22	26.414	170.9	0.00	13.61	1509.8	0.963		
ISL	500	10.53	34.78	26.874	147.8	0.00	11.48	1504.0	1.163		
ISL	600	8.24	34.78	26.874	147.8	0.00	9.49	1498.0	1.263		
ISL	800	7.21	34.53	27.017	115.7	0.00	7.23	1482.8	1.530		
ISL	1000	5.71	34.49	27.181	100.1	0.00	5.62	1459.7	1.751		
ISL	1200	3.94	34.53	27.410	77.3	0.00	3.86	1447.7	2.010		
ISL	1400	3.24	34.58	27.485	64.5	0.00	3.16	1442.1	2.162		
ISL	2000	0.28	34.94	27.670	51.0	0.00	2.24	1482.9	2.610		

STATION	12	21.585	180.246	DAWML	1/87			
DATE	20/05/87	TIME	1744 07	DEPTH	1450			
DEPTH	TM	SALINITY	SIGMA-T	A.S.V	CL	W/L	POT-TEMP	S.S
	HC	Pct		CT/PT				M/S
008	0	21.540	35.587	24.671	326.1	0.00	21.98	1529.1
016	0	21.870	35.586	24.673	326.8	0.00	21.95	1529.3
024	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
032	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
040	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
048	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
056	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
064	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
072	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
080	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
088	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
096	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
104	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
112	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
120	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
128	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
136	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
144	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
152	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
160	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
168	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
176	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
184	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
192	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
200	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
208	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
216	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
224	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
232	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
240	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
248	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
256	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
264	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
272	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
280	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
288	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
296	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
304	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
312	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
320	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
328	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3

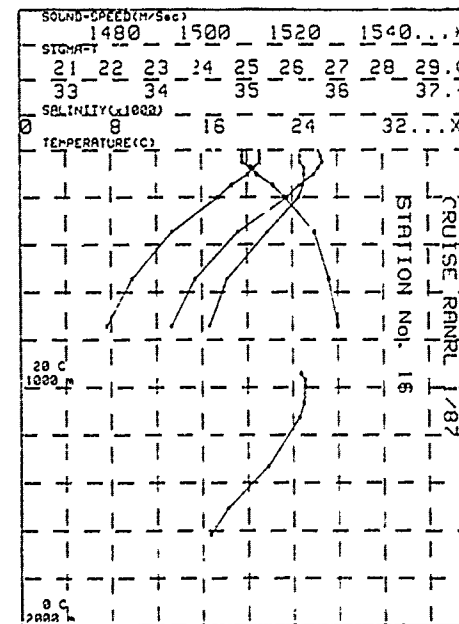
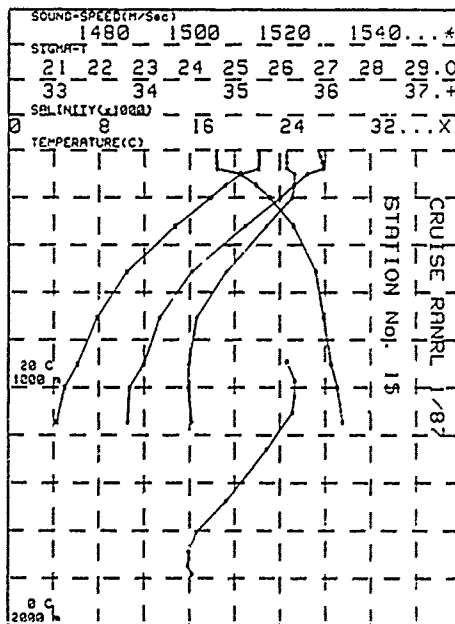
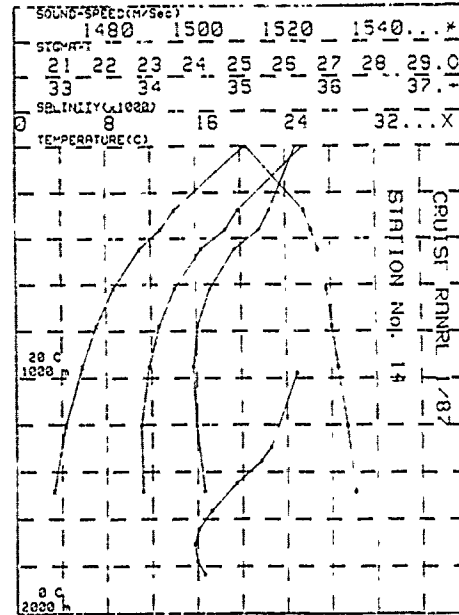
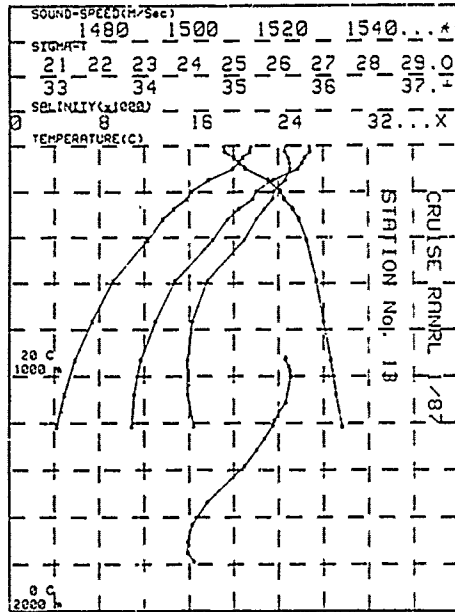


STATION 13		31.585		181.036		RAWEL 1/87		DEPTH= 1330	
DATE= 30/05/87		TIME= 2341 GMT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt	CL/T	°C	°C	°C	°C	°C	
088	0	21.540	35.581	24.789	314.8	0.00	21.54	1326.9	
088	28	21.430	35.572	24.613	315.0	0.00	21.42	1327.0	
088	52	20.810	35.609	25.011	295.8	0.00	20.80	1325.8	
088	75	20.430	35.624	25.125	285.8	0.00	20.42	1325.3	
088	100	19.940	35.630	25.250	273.6	0.00	19.92	1324.3	
088	150	17.730	35.577	25.782	225.4	0.00	17.70	1318.9	
088	198	16.210	35.453	26.048	201.2	0.00	16.18	1315.0	
088	232	15.793	35.438	26.134	194.1	0.00	15.75	1314.2	
088	278	14.640	35.342	26.315	177.8	0.00	14.60	1311.2	
088	321	13.990	35.250	26.452	160.8	0.00	13.91	1306.8	
088	413	12.280	35.118	26.624	150.8	0.00	12.22	1305.4	
088	581	9.250	34.702	26.845	131.2	0.00	9.18	1297.0	
088	786	7.340	34.531	26.999	117.1	0.00	7.28	1292.7	
088	1078	4.925	34.482	27.273	90.7	0.00	4.83	1287.8	
088	1317	4.211	34.548	27.403	77.9	0.00	4.11	1287.3	
131	0	21.54	35.58	24.789	314.8	0.00	21.54	1326.9	0.000
131	10	21.50	35.58	24.786	314.3	0.00	21.50	1327.0	0.31
131	25	21.43	35.57	24.612	313.8	0.00	21.43	1327.0	0.79
131	50	20.83	35.61	24.998	299.8	0.00	20.84	1326.0	1.15
131	75	20.43	35.62	25.125	285.8	0.00	20.42	1325.3	1.29
131	100	19.94	35.63	25.250	273.6	0.00	19.92	1324.3	1.29
131	150	17.73	35.58	25.782	225.4	0.00	17.70	1318.9	1.42
131	200	16.20	35.45	26.052	200.9	0.00	16.18	1315.0	1.59
131	250	15.30	35.40	26.214	186.8	0.00	15.28	1311.9	1.69
131	300	14.09	35.29	26.383	170.8	0.00	14.05	1309.8	1.71
131	400	12.48	35.14	26.602	152.8	0.00	12.43	1309.8	1.87
131	500	10.86	34.88	26.740	140.6	0.00	10.80	1300.8	1.024
131	600	9.14	34.68	26.853	130.5	0.00	9.08	1299.7	1.159
131	800	7.04	34.51	27.027	114.4	0.00	6.96	1291.7	1.404
131	1000	5.43	34.48	27.201	97.7	0.00	5.35	1286.8	1.618

STATION 14		31.598		181.346		RAWEL 1/87		DEPTH= 1509	
DATE= 31/05/87		TIME= 0405 GMT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt	CL/T	°C	°C	°C	°C	°C	
084	0	20.420	35.619	25.123	283.0	0.00	20.42	1324.0	
088	218	14.090	35.322	26.418	187.9	0.00	14.05	1300.4	
088	363	12.890	35.208	26.377	154.5	0.00	12.84	1306.7	
088	448	11.050	34.532	26.723	141.4	0.00	10.94	1301.2	
088	618	8.640	34.603	28.901	123.7	0.00	8.61	1295.3	
088	781	7.120	34.512	27.018	115.2	0.00	7.04	1291.7	
088	933	5.860	34.427	27.149	102.9	0.00	5.77	1288.3	
088	1209	4.380	34.498	27.349	83.4	0.00	4.28	1287.7	
088	1471	3.291	34.543	27.523	66.0	0.00	3.18	1286.0	
131	0	20.42	35.61	25.123	283.0	0.00	20.42	1324.0	0.000
131	200	13.85	35.31	26.480	184.4	0.00	13.80	1309.0	1.663
131	400	12.01	35.01	26.848	148.3	0.00	11.95	1304.1	1.820
131	500	10.22	34.81	26.784	136.1	0.00	10.16	1299.2	1.942
131	800	8.99	34.61	26.880	127.1	0.00	8.84	1295.8	1.094
131	1000	8.97	34.50	27.032	113.8	0.00	8.88	1291.5	1.135
131	1300	5.54	34.47	27.198	98.0	0.00	5.45	1288.0	1.546
131	1500	3.83	34.52	27.414	77.0	0.00	3.82	1287.8	1.612

STATION 15		32.005		182.006		RAWEL 1/87		DEPTH= 1174	
DATE= 31/05/87		TIME= 0759 GMT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt	CL/T	°C	°C	°C	°C	°C	
088	0	22.150	35.578	24.618	331.3	0.00	22.15	1328.5	
088	26	22.180	35.575	24.606	333.3	0.00	22.17	1329.0	
088	52	22.180	35.573	24.614	333.5	0.00	22.15	1329.4	
088	77	22.130	35.578	24.622	333.7	0.00	22.11	1329.7	
088	162	20.540	35.642	25.124	298.7	0.00	20.52	1326.0	
088	148	19.190	35.658	25.477	254.8	0.00	19.18	1323.1	
088	202	17.860	35.634	25.783	226.0	0.00	17.83	1320.2	
088	321	14.750	35.555	26.299	180.8	0.00	14.71	1313.3	
088	514	10.490	34.909	26.796	135.3	0.00	10.43	1300.5	
088	708	7.840	34.578	26.968	120.2	0.00	7.77	1293.4	
088	903	6.150	34.490	27.131	104.6	0.00	6.07	1289.9	
088	1001	4.994	34.482	27.285	90.7	0.00	4.91	1286.8	
088	1147	4.290	34.523	27.378	80.0	0.00	4.20	1286.4	
131	0	22.15	35.58	24.618	331.3	0.00	22.15	1328.5	0.000
131	10	22.17	35.58	24.610	332.3	0.00	22.17	1328.7	0.033
131	25	22.15	35.58	24.606	333.3	0.00	22.17	1329.0	0.063
131	50	22.16	35.58	24.613	333.5	0.00	22.15	1329.3	0.196
131	75	22.13	35.58	24.621	333.6	0.00	22.12	1329.7	0.250
131	100	20.64	35.66	25.082	298.7	0.00	20.63	1326.3	0.328
131	150	19.17	35.68	25.483	254.0	0.00	19.14	1323.1	0.484
131	200	17.91	35.63	25.782	227.0	0.00	17.86	1320.3	0.564
131	250	16.57	35.52	26.016	206.1	0.00	16.53	1317.0	0.863
131	300	15.28	35.40	26.231	187.7	0.00	15.23	1313.7	0.792
131	400	12.81	35.16	26.542	158.5	0.00	12.76	1306.9	0.946
131	500	10.74	34.84	26.771	137.8	0.00	10.68	1301.2	1.118
131	600	9.20	34.73	26.871	126.8	0.00	9.14	1296.9	1.249
131	800	7.15	34.52	27.026	114.8	0.00	7.07	1292.2	1.481
131	1000	5.00	34.48	27.264	90.9	0.00	4.92	1286.9	1.686

STATION 16		31.585		182.306		RAWEL 1/87		DEPTH= 1240	
DATE= 31/05/87		TIME= 1208 GMT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt	CL/T	°C	°C	°C	°C	°C	
088	0	21.120	35.595	24.918	302.8	0.00	21.12	1325.8	
088	26	21.180	35.586	24.869	305.3	0.00	21.15	1326.4	
088	52	21.130	35.590	24.908	305.3	0.00	21.12	1326.7	
088	78	20.830	35.637	25.041	298.8	0.00	20.82	1325.8	
088	104	20.090	35.636	25.228	277.0	0.00	20.07	1324.8	
088	150	18.640	35.625	25.587	244.1	0.00	18.63	1321.6	
088	201	17.480	35.574	25.845	221.0	0.00	17.43	1318.9	
088	348	13.580	35.226	26.498	182.0	0.00	13.51	1308.1	
088	545	9.850	34.781	26.807	134.5	0.00	9.79	1298.5	
088	743	7.850	34.587	27.001	117.0	0.00	7.57	1293.3	
131	0	21.12	35.58	24.918	302.8	0.00	21.12	1325.8	0.000
131	10	21.14	35.58	24.868	304.1	0.00	21.14	1326.1	0.030
131	25	21.16	35.59	24.896	305.3	0.00	21.15	1326.3	0.079
131	50	21.13	35.59	24.902	305.3	0.00	21.14	1326.7	0.132
131	75	20.85	35.64	25.074	290.4	0.00	20.84	1325.9	0.227
131	100	20.18	35.64	25.022	279.2	0.00	20.18	1325.0	0.298
131	150	18.64	35.63	25.587	244.1	0.00	18.63	1321.6	0.429
131	200	17.48	35.58	25.840	221.4	0.00	17.45	1318.9	0.549
131	250	15.95	35.46	26.102	197.7	0.00	15.91	1314.8	0.681
131	300	14.58	35.34	26.322	177.7	0.00	14.51	1311.3	0.747
131	400	12.31	35.08	26.586	153.8	0.00	12.25	1304.1	0.912
131	500	10.54	34.86	26.748	136.8	0.00	10.47	1300.3	1.099
131	800	9.11	34.79	26.873	128.6	0.00	9.04	1296.8	1.194

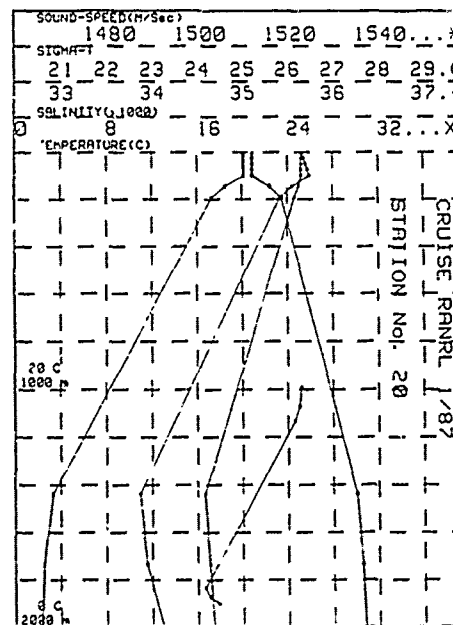
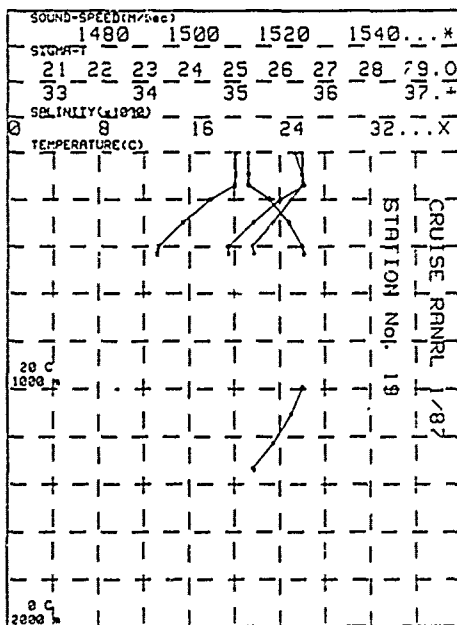
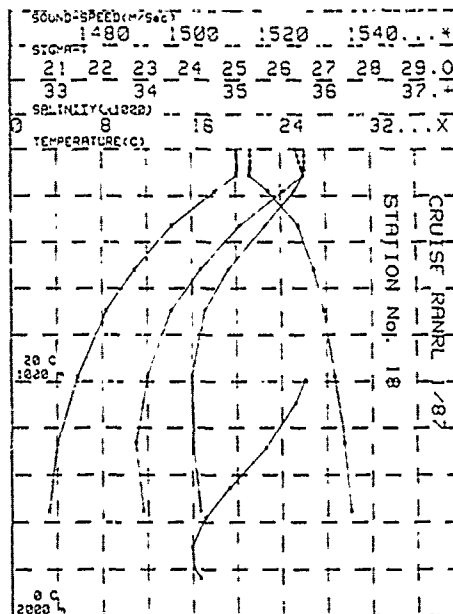
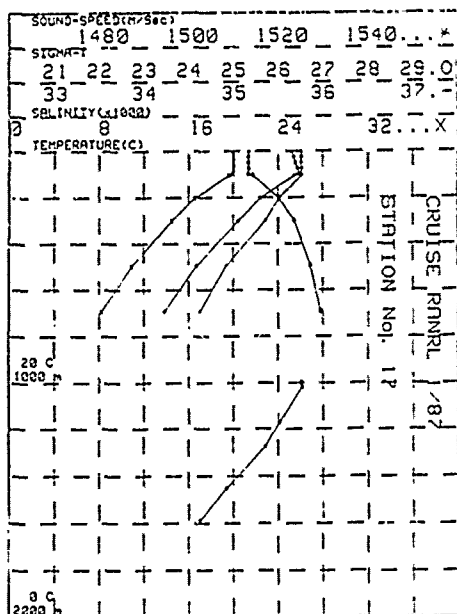


STATION 17 DATE= 31/05/87									
32.018 163.000 TIME= 1623 GHT									
RANGE 1/87 DEPTH 1120									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT	TEMP	S.S	Dyn
m	°C	Ppt	CL/T	ML/L	°C	°C	°C	M/Sec	
088	0	18.290	35.759	25.545	262.0	0.00	18.98	1523.0	
088	25	20.010	35.758	25.537	263.6	0.00	20.01	1523.5	
088	50	20.010	35.754	25.536	264.6	0.00	20.00	1523.9	
088	75	20.010	35.759	25.536	265.2	0.00	20.00	1524.3	
088	100	20.010	35.761	25.541	265.9	0.00	19.99	1524.7	
088	125	19.630	35.764	25.543	256.2	0.00	18.81	1525.8	
088	204	18.530	35.514	26.021	204.1	0.00	18.50	1518.1	
088	301	16.460	35.256	26.261	176.1	0.00	14.43	1511.1	
088	496	10.820	34.921	26.729	141.9	0.00	10.86	1501.8	
088	664	8.295	34.626	26.848	121.9	0.00	8.13	1494.6	
ISL	0	18.98	35.76	25.545	262.0	0.00	18.98	1523.0	0.000
ISL	10	20.00	35.76	25.541	262.7	0.00	20.00	1523.2	0.026
ISL	25	20.01	35.76	25.537	263.6	0.00	20.01	1523.5	0.085
ISL	50	20.01	35.75	25.536	264.6	0.00	20.00	1523.9	0.132
ISL	75	20.01	35.76	25.536	265.2	0.00	20.00	1524.3	0.198
ISL	100	20.01	35.76	25.541	265.9	0.00	19.99	1524.7	0.264
ISL	150	18.11	35.64	25.722	230.2	0.00	18.06	1520.0	0.388
ISL	200	16.61	35.52	26.002	205.8	0.00	16.80	1510.4	0.487
ISL	250	15.33	35.44	26.199	186.7	0.00	15.48	1513.7	0.596
ISL	300	14.50	35.38	26.358	174.4	0.00	14.48	1511.2	0.687
ISL	400	12.59	35.12	26.564	158.4	0.00	12.53	1506.1	0.853
ISL	500	10.86	34.82	26.732	141.8	0.00	10.83	1501.7	1.003
ISL	600	9.40	34.73	26.862	130.0	0.00	9.33	1497.8	1.140

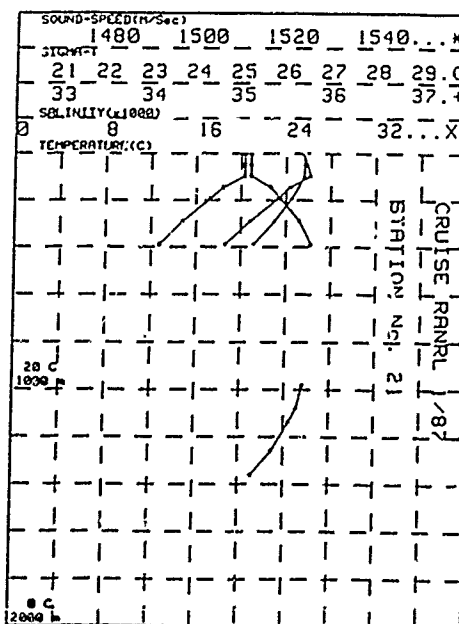
STATION 18 DATE= 31/05/87									
32.005 163.296 TIME= 2149 GHT									
RANGE 1/87 DEPTH 1800									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT	TEMP	S.S	Dyn
m	°C	Ppt	CL/T	ML/L	°C	°C	°C	M/Sec	
088	0	20.47	35.766	25.529	263.5	0.00	20.07	1523.2	
088	17	20.090	35.766	25.524	265.0	0.00	20.06	1523.7	
088	33	20.070	35.766	25.529	265.4	0.00	20.06	1524.1	
088	79	20.100	35.763	25.519	271.3	0.00	20.01	1524.6	
088	91	20.110	35.771	25.522	267.4	0.00	20.06	1524.8	
088	113	20.100	35.760	25.516	264.7	0.00	20.06	1525.2	
088	182	18.150	35.652	25.735	231.0	0.00	18.12	1520.7	
088	300	14.250	35.324	26.265	172.5	0.00	14.20	1510.6	
088	320	10.960	34.912	26.727	142.5	0.00	10.82	1502.0	
088	697	8.370	34.645	26.826	123.1	0.00	8.30	1495.3	
088	940	5.850	34.494	27.172	101.1	0.00	5.76	1490.0	
088	1263	4.696	34.513	27.392	78.1	0.00	3.87	1487.3	
088	1553	3.254	34.658	27.529	60.5	0.00	3.14	1486.1	
ISL	0	20.07	35.77	25.529	263.5	0.00	20.07	1523.2	0.000
ISL	10	20.06	35.77	25.528	264.1	0.00	20.06	1523.4	0.026
ISL	25	20.09	35.77	25.524	264.8	0.00	20.08	1523.7	0.066
ISL	50	20.07	35.77	25.526	265.2	0.00	20.06	1524.0	0.132
ISL	75	20.10	35.76	25.519	267.1	0.00	20.06	1524.5	0.198
ISL	100	20.11	35.77	25.520	268.7	0.00	20.09	1524.9	0.264
ISL	150	18.04	35.71	25.520	247.6	0.00	18.02	1522.6	0.390
ISL	200	17.62	35.61	25.632	222.2	0.00	17.58	1519.4	0.514
ISL	250	16.22	35.50	26.076	200.3	0.00	16.18	1515.6	0.621
ISL	300	14.95	35.29	26.281	181.8	0.00	14.90	1512.8	0.718
ISL	400	12.63	35.18	26.525	160.3	0.00	12.68	1507.4	0.888
ISL	500	11.21	34.99	26.697	145.2	0.00	11.15	1502.9	1.042
ISL	600	9.86	34.77	26.829	133.2	0.00	9.59	1496.7	1.181
ISL	800	7.37	34.57	27.026	113.1	0.00	7.29	1483.1	1.429
ISL	1000	5.99	34.50	27.188	95.3	0.00	5.80	1486.7	1.643
ISL	1300	3.92	34.52	27.417	78.7	0.00	3.82	1487.7	1.907
ISL	1500	3.33	34.62	27.555	63.6	0.00	3.22	1486.8	2.046

STATION 19 DATE= 01/06/87									
31.595 164.200 TIME= 0343 GHT									
RANGE 1/87 DEPTH 2830									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT	TEMP	S.S	Dyn
m	°C	Ppt	CL/T	ML/L	°C	°C	°C	M/Sec	
088	0	20.110	35.746	25.503	265.9	0.00	20.11	1523.3	
088	54	20.110	35.746	25.503	266.1	0.00	20.09	1523.9	
088	140	20.070	35.746	25.517	266.7	0.00	20.04	1523.5	
088	200	17.850	35.627	25.781	227.2	0.00	17.86	1520.2	
088	300	15.430	35.426	26.056	186.2	0.00	15.36	1514.2	
088	400	13.290	35.184	26.485	164.4	0.00	13.23	1508.6	
088	432	13.140	35.213	26.530	160.3	0.00	13.08	1506.7	
ISL	0	20.11	35.75	25.503	266.0	0.00	20.11	1523.3	0.000
ISL	10	20.11	35.75	25.503	266.4	0.00	20.11	1523.5	0.027
ISL	25	20.11	35.75	25.504	267.0	0.00	20.11	1523.7	0.067
ISL	50	20.11	35.75	25.504	267.9	0.00	20.10	1524.2	0.133
ISL	75	20.11	35.75	25.506	268.7	0.00	20.10	1524.6	0.200
ISL	100	20.10	35.75	25.507	269.2	0.00	20.08	1525.2	0.264
ISL	150	18.67	35.53	25.604	261.6	0.00	18.64	1524.3	0.402
ISL	200	17.89	35.63	25.781	227.2	0.00	17.86	1520.2	0.524
ISL	250	16.62	35.53	26.011	206.5	0.00	16.54	1517.1	0.633
ISL	300	15.43	35.43	26.206	186.2	0.00	15.30	1514.2	0.723
ISL	400	13.29	35.18	26.485	164.4	0.00	13.23	1508.6	0.908

STATION 20 DATE= 01/06/87									
32.005 164.336 TIME= 1203 GHT									
RANGE 1/87 DEPTH 2407									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT	TEMP	S.S	Dyn
m	°C	Ppt	CL/T	ML/L	°C	°C	°C	M/Sec	
088	0	20.110	35.655	25.511	275.8	0.00	20.12	1523.2	
088	15	20.130	35.655	25.528	273.8	0.00	20.12	1523.7	
088	50	20.130	35.658	25.529	274.8	0.00	20.12	1524.1	
088	74	20.140	35.653	25.524	278.1	0.00	20.13	1524.3	
088	100	20.130	35.654	25.528	276.7	0.00	20.11	1524.9	
088	149	18.520	35.631	25.627	240.1	0.00	18.49	1521.1	
088	194	17.330	35.579	25.681	217.4	0.00	17.30	1518.4	
088	1438	3.320	34.564	27.323	64.0	0.00	3.21	1487.3	
088	1735	2.460	34.639	27.642	53.6	0.00	2.37	1486.5	
088	2327	1.960	34.723	27.759	43.3	0.00	1.82	1486.8	
ISL	0	20.12	35.66	25.511	275.8	0.00	20.12	1523.2	0.000
ISL	10	20.13	35.66	25.529	273.3	0.00	20.12	1523.4	0.017
ISL	25	20.13	35.66	25.528	273.8	0.00	20.12	1523.7	0.046
ISL	50	20.13	35.66	25.529	274.8	0.00	20.12	1524.1	0.137
ISL	75	20.16	35.65	25.524	278.4	0.00	20.13	1524.3	0.206
ISL	100	20.13	35.65	25.528	276.7	0.00	20.11	1524.9	0.275
ISL	150	18.42	35.63	25.644	236.3	0.00	18.40	1520.9	0.403
ISL	200	17.26	35.57	25.686	216.7	0.00	17.22	1518.2	0.517
ISL	250	16.37	35.49	25.990	207.5	0.00	16.33	1515.8	0.624
ISL	300	15.50	35.42	26.096	186.6	0.00	15.46	1513.5	0.718
ISL	400	13.66	35.28	26.277	161.5	0.00	13.61	1509.2	0.828
ISL	500	12.33	35.15	26.453	144.4	0.00	12.28	1505.2	0.913
ISL	600	10.91	35.04	26.618	130.5	0.00	10.85	1501.7	1.047
ISL	800	8.99	34.95	26.810	123.6	0.00	8.92	1499.7	1.266
ISL	1000	6.32	34.71	27.159	101.0	0.00	6.24	1491.4	1.642
ISL	1300	4.64	34.60	27.432	74.8	0.00	4.54	1487.8	2.165
ISL	1500	3.11	34.60	27.551	63.0	0.00	3.00	1487.5	2.306
ISL	2000	2.08	34.58	27.714	44.7	0.00	1.94	1491.6	2.542



DATE/TIME		33.005		159 016		RANKL		18/78		2205	
DATE: 01/08/87		TIME: 1533 07									
DEPTH	TDSP	SALINITY	SI004-T	A.S.V	CL/PT	M/L/L	POT	TEMP	S.S	W/SOC	Oym.m
0	20.310	35.701	25.215	274.3	0	00	20.31	1532.8	0.000		
5	20.330	35.704	25.214	276.2	0	00	20.31	1532.7	0.027		
97	20.300	35.701	25.218	277.5	0	00	20.28	1532.4	0.086		
100	18.400	35.639	25.658	273.0	0	00	18.29	1530.9	0.207		
194	17.280	35.180	25.117	271.1	0	00	17.12	1527.8	0.418		
282	14.015	35.372	26.301	179.0	0	00	14.77	1512.0	0.718		
300	12.186	35.143	26.552	137.4	0	00	12.71	1506.4	0.880		
0	20.31	35.70	25.215	274.3	0	00	20.31	1532.8	0.000		
10	20.32	35.70	25.215	274.3	0	00	20.31	1534.0	0.027		
25	20.33	35.70	25.215	275.2	0	00	20.32	1534.3	0.086		
30	20.33	35.70	25.214	276.0	0	00	20.32	1534.7	0.158		
75	20.38	35.70	25.218	276.8	0	00	20.30	1532.0	0.207		
100	18.10	35.70	25.231	274.3	0	00	18.15	1523.0	0.403		
150	16.32	35.63	25.677	235.4	0	00	16.30	1520.6	0.768		
200	17.10	35.25	25.913	214.4	0	00	16.08	1517.0	0.818		
250	15.12	35.11	26.138	176.8	0	00	15.07	1511.7	0.818		
300	14.63	35.35	26.328	172.0	0	00	14.58	1511.8	0.818		



Cruise MSD 2/87*Notes for cruise MSD 2/87*

As for cruise RANRL 1/87, the Nansen bottles were strung on the CTD wire, with similar results ie many bottles pre-tripped. A T-S polynomial was constructed from the good data sets for the range 2.5 to 19.5°C of the form:

$$S = a + bT + cT^2 + dT^3 + eT^4 + fT^5 + gT^6$$

where

$$a = 34.81344$$

$$b = -0.2574205 * 0.001$$

$$c = -0.5025278 * 0.01$$

$$d = 0.109749 * 0.01$$

$$e = -0.857145 * 0.001$$

$$f = 0.302372 * 10^{-4}$$

$$g = -0.413648 * 10^{-6}$$

Standard error of estimate of 0.019 PSU.

Additional Nansen data for cruise MSD 2/87

For this cruise the incomplete data sets filled in by using T-S polynomial and CTD data ARE included in the tables, and are marked with closed circles to show their origin. These values are included to obtain more useful plots and derived data.

Other sources of data for cruise MSD 2/87

Lawrence, M.W. (1987)

"Maritime Systems Division MSD Cruise Report 2/87. Study of acoustic bottom interaction using ADOBE equipment, and, study of Tasman Front and East Australian Current".

(Unpublished document). A narrative of the actual cruise

Mulhearn, P.J., Hamilton, L.J., and Scott, B.D. (1989)

"Deep structure of the East Australian Current and Tasman Front".

WSRL Tech. Memo. 7/89

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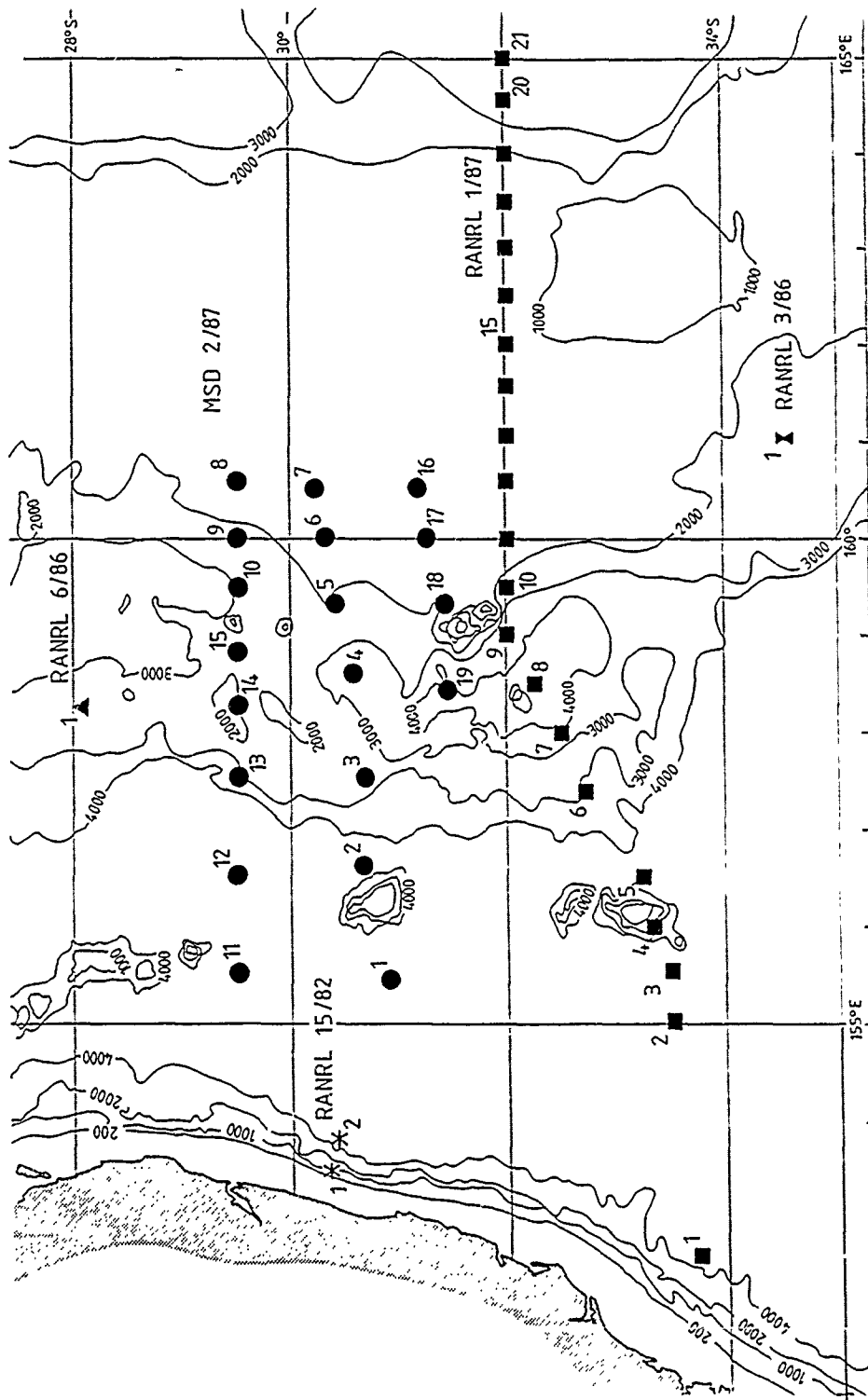


Figure 26. Nansen station positions for survey MSD 2/87

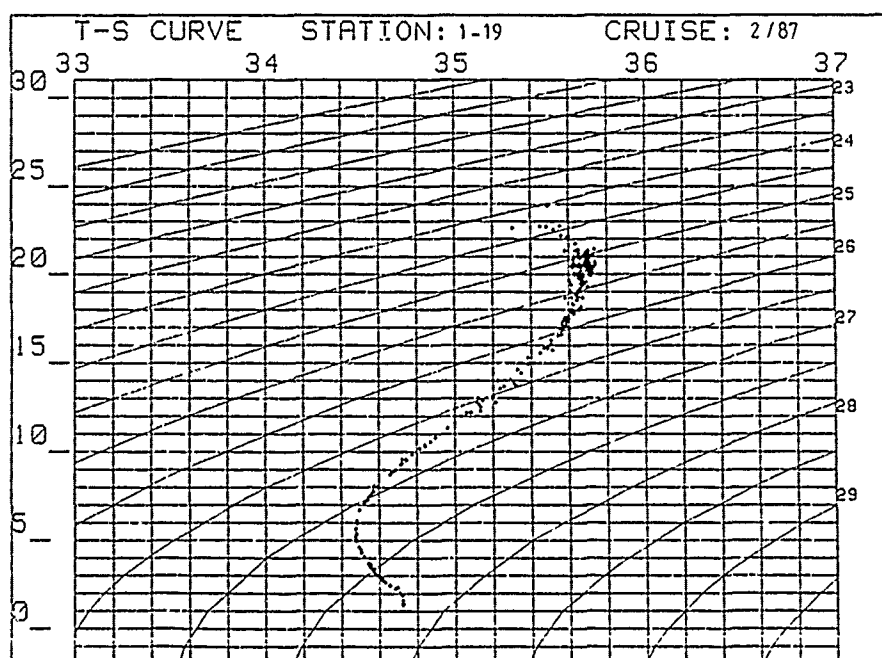
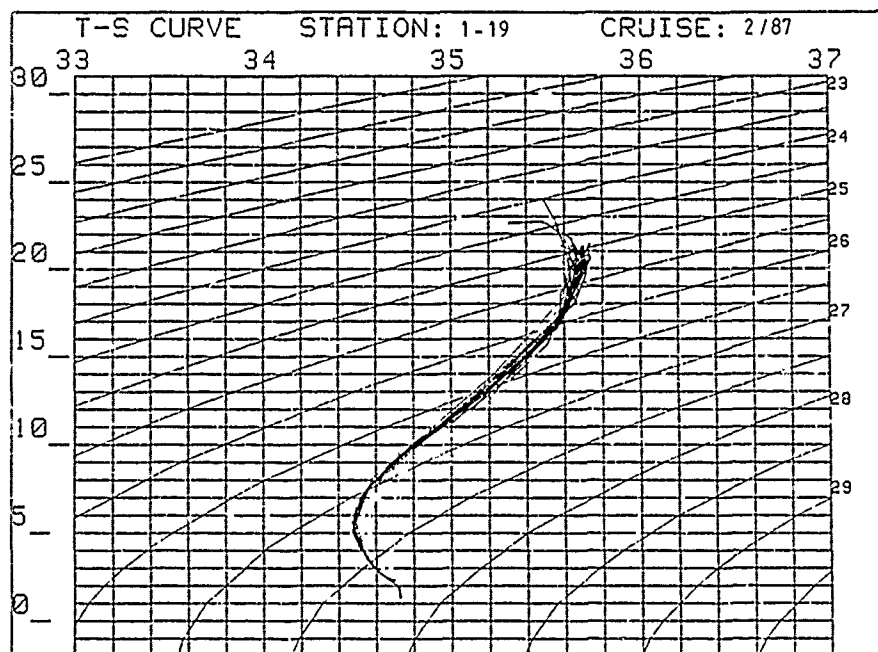
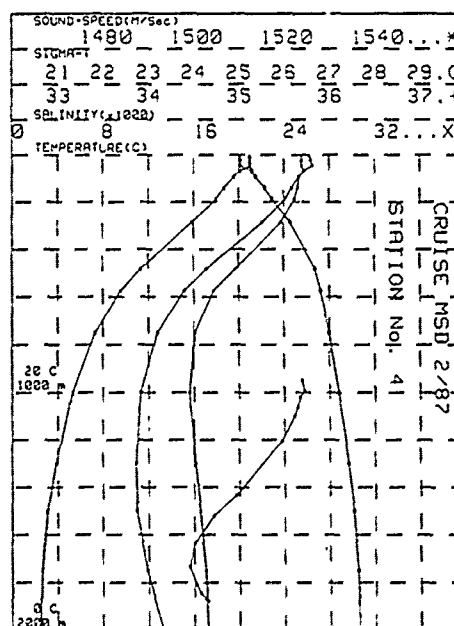
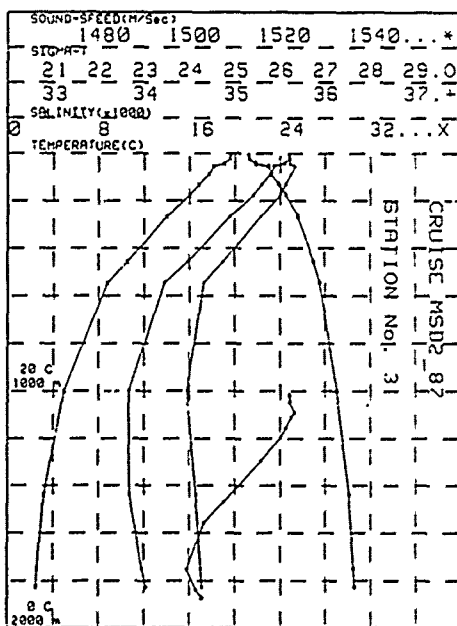
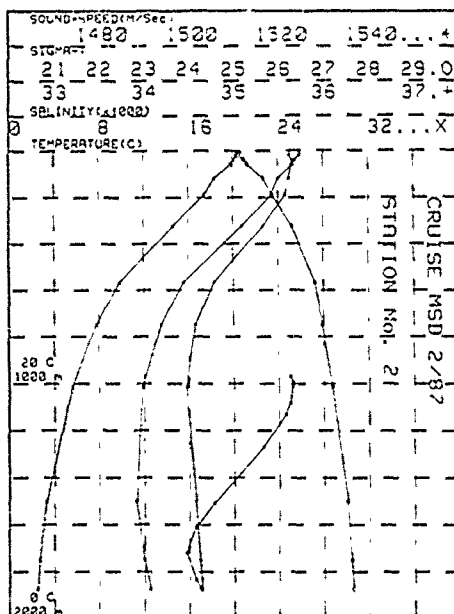
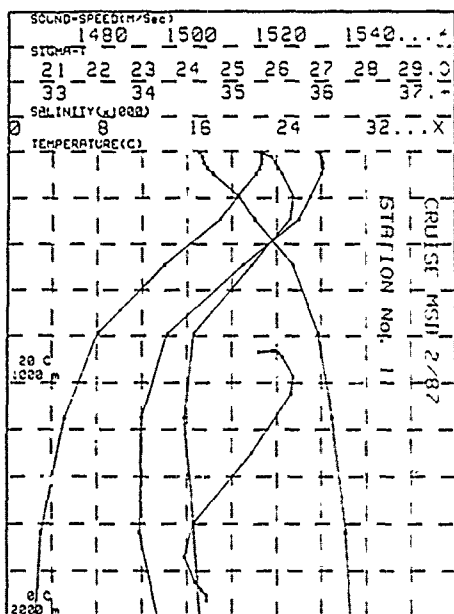


Figure 27. Temperature-salinity curves and scatter plot for cruise MSD 2/87

STATION 1 DATE= 11/11/87									
30.353 155.246 HSD 2/87									
TIME= 2125 QNT DEPTH= 4634									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TEMP	S.S	Dyn.σ	
m	°C	PSU	kg/m ³	°C	ML/L	°C	W/Sec		
0	22.610	35.305	24.278	343.5	0.00	22.61	1529.3		
24	22.720	35.452	24.358	356.8	0.00	22.72	1530.2		
48	22.700	35.493	24.368	354.7	0.00	22.69	1530.8		
72	22.530	35.522	24.446	346.3	0.00	22.52	1530.8		
96	22.190	35.542	24.593	337.1	0.00	22.17	1530.2		
120	20.530	35.879	25.140	286.5	0.00	20.49	1527.8		
144	19.000	35.632	25.321	255.3	0.00	18.95	1524.9		
168	17.900	35.224	26.363	178.9	0.00	17.82	1512.5		
192	16.070	34.378	26.931	123.1	0.00	7.99	1495.6		
216	15.140	34.471	27.240	99.1	0.00	5.04	1480.9		
240	14.040	34.588	27.551	83.7	0.00	2.92	1469.5		
264	12.940	34.667	27.677	51.7	0.00	2.18	1464.9		
288	11.847	34.720	27.756	44.2	0.00	1.70	1501.4		
312	1.458	34.722	27.790	39.8	0.00	1.23	1506.1		
336									
360									
384									
408									
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STATION 2		30.405		156.37E		HSD 2/87			
DATE= 12/11/87		TIME= 0445 QNT		DEPTH=		4590			
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TEMP	S.S		
m	°C	PSU	kg/m ³	°C	ML/L	°C	W/Sec		Dyn.σ
000	0	20.620	35.628	25.077	287.5	0.00	20.62	1524.5	
024	24	20.600	35.629	25.043	287.8	0.00	20.60	1524.8	
048	48	20.090	35.658	25.241	273.3	0.00	20.08	1523.8	
072	72	19.810	35.654	25.312	287.1	0.00	19.80	1523.3	
096	96	18.790	35.655	25.318	284.6	0.00	18.78	1523.3	
120	120	18.310	35.622	25.673	254.8	0.00	18.29	1520.1	
144	144	17.370	35.580	25.872	218.1	0.00	17.34	1518.5	
168	168	16.810	35.528	26.311	179.5	0.00	16.78	1511.9	
192	192	15.840	34.780	26.808	131.3	0.00	9.77	1496.9	
216	216	14.780	34.570	26.972	120.1	0.00	7.68	1493.8	
240	240	13.610	34.471	27.183	99.9	0.00	5.52	1486.8	
264	264	12.290	34.570	27.515	67.0	0.00	3.18	1466.2	
288	288	10.990	34.620	27.619	57.6	0.00	2.58	1469.9	
312	312	9.500	34.640	27.642	54.4	0.00	2.36	1461.3	
336	336								
360	360								
384	384								
408	408								
432	432								
456	456								
480	480								
504	504								
528	528								
552	552								
576	576								
600	600								
624	624								
648	648								
672	672								
696	696								
720	720								
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1776	1776								
1800	1800								
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1992	1992								
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4704	4704								
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4752	4752								
4776	4776								
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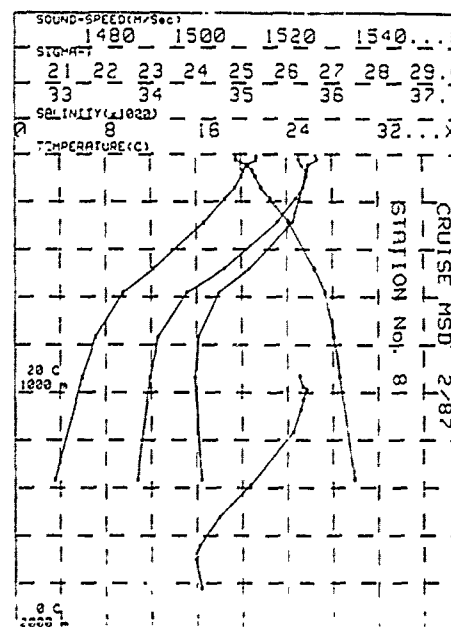
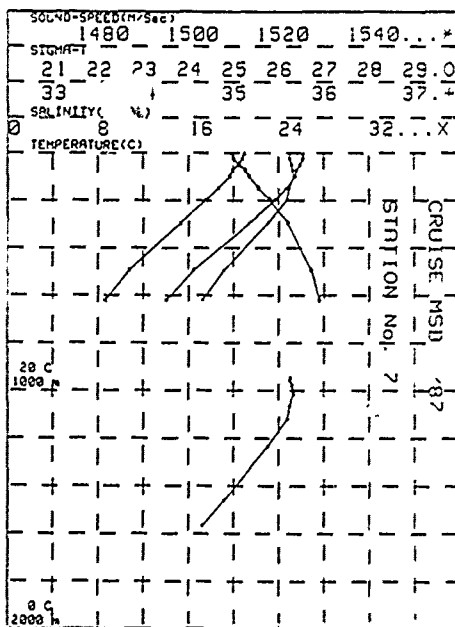
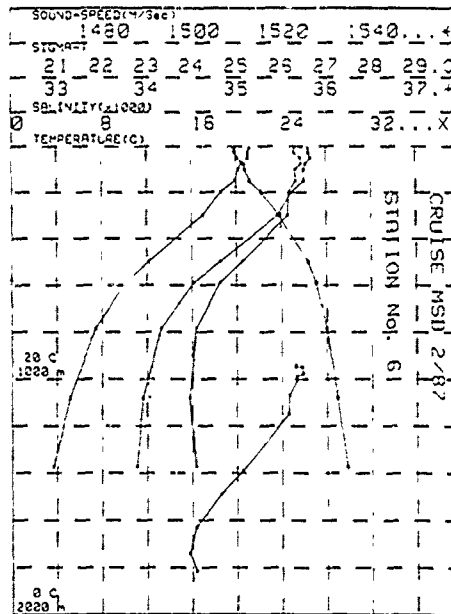
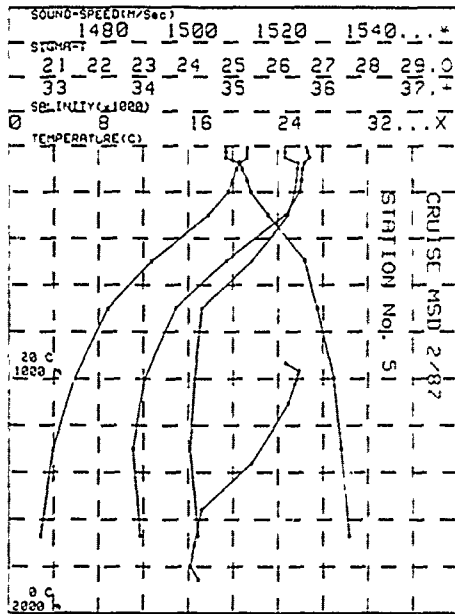


STATION 5 DATE= 13/11/87									
30.263 199.186 HSD 2/87 TIME= 1719 GHT DEPTH= 2587									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TDWP	S.S	Dym #	
m	°C	PSU	kg/m ³	°C	ML/L	°C	M/Sec		
0BS 0	21.540	35.582	24.845	309.3	0.00	21.34	1526.4		
0BS 25	21.330	35.583	24.848	310.1	0.00	21.33	1526.8		
0BS 50	21.330	35.583	24.848	311.0	0.00	21.32	1527.2		
0BS 75	20.640	35.736	25.148	283.4	0.00	20.45	1526.0		
0BS 100	20.170	35.727	25.219	277.5	0.00	20.25	1525.8		
0BS 150	19.630	35.710	25.323	269.4	0.00	19.90	1525.2		
0BS 199	19.553	35.690	25.408	263.0	0.00	19.51	1525.0		
0BS 299	17.830	35.615	25.786	229.9	0.00	17.78	1521.8		
0BS 496	12.740	35.214	26.467	154.9	0.00	12.68	1506.5		
0BS 700	8.620	34.950	26.873	120.0	0.00	8.74	1487.1		
0BS 1000	5.610	34.570	27.237	95.2	0.00	5.72	1490.3		
0BS 1300	3.970	34.520	27.408	77.7	0.00	3.87	1487.8		
0BS 1670	2.870	34.614	27.598	59.7	0.00	2.75	1486.3		
ISL 0	21.34	35.58	24.845	309.3	0.00	21.34	1526.4	0.000	
ISL 10	21.33	35.58	24.847	309.7	0.00	21.33	1526.5	.031	
ISL 25	21.33	35.58	24.848	310.1	0.00	21.33	1526.8	.077	
ISL 50	21.33	35.58	24.848	311.0	0.00	21.32	1527.2	.155	
ISL 75	20.64	35.74	25.148	283.4	0.00	20.45	1526.0	.229	
ISL 100	20.17	35.73	25.219	277.5	0.00	20.25	1525.8	.300	
ISL 150	19.63	35.71	25.323	269.4	0.00	19.90	1525.2	.436	
ISL 200	19.54	35.69	25.411	262.7	0.00	19.50	1525.0	.598	
ISL 250	18.74	35.64	25.598	244.5	0.00	18.70	1523.6	.988	
ISL 300	17.80	35.61	25.782	229.4	0.00	17.75	1521.8	.815	
ISL 400	13.08	35.43	26.277	185.2	0.00	13.01	1515.8	1.029	
ISL 500	12.67	35.20	26.613	154.4	0.00	12.60	1506.2	1.198	
ISL 600	10.16	34.67	26.743	142.1	0.00	10.18	1502.0	1.347	
ISL 800	7.89	34.62	27.018	116.5	0.00	7.60	1494.2	1.467	
ISL 1000	5.81	34.57	27.237	95.2	0.00	5.72	1490.3	1.623	
ISL 1300	3.87	34.52	27.408	77.7	0.00	3.87	1487.8	2.060	
ISL 1500	3.22	34.55	27.510	67.5	0.00	3.10	1487.9	2.226	

STATION 6 DATE= 13/11/87									
30.195 199.016 HSD 2/87 TIME= 2320 GHT DEPTH= 1726									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TDWP	S.S	Dym #	
m	°C	PSU	kg/m ³	°C	ML/L	°C	M/Sec		
0BS 0	21.210	35.655	24.837	300.8	0.00	21.21	1526.1		
0BS 25	21.080	35.650	24.968	296.7	0.00	21.08	1526.2		
0BS 50	21.070	35.724	25.027	294.0	0.00	21.06	1526.7		
0BS 75	20.500	35.735	25.190	279.4	0.00	20.49	1525.8		
0BS 100	20.140	35.665	25.207	278.7	0.00	20.22	1525.2		
0BS 150	19.890	35.668	25.300	271.3	0.00	19.48	1525.1		
0BS 199	18.650	35.582	25.558	248.6	0.00	18.61	1522.3		
0BS 299	17.020	35.573	25.850	214.0	0.00	16.97	1517.2		
0BS 496	12.180	35.082	26.863	154.9	0.00	12.11	1506.3		
0BS 599	10.180	34.818	26.779	126.4	0.00	10.11	1500.5		
0BS 785	7.450	34.545	26.987	117.8	0.00	7.27	1483.1		
0BS 1079	5.230	34.473	27.231	95.4	0.00	5.14	1489.1		
0BS 1373	3.700	34.544	27.454	73.1	0.00	3.59	1487.8		
ISL 0	21.21	35.66	24.837	300.8	0.00	21.21	1526.1	0.008	
ISL 10	21.14	35.66	24.968	300.3	0.00	21.14	1526.2	.030	
ISL 25	21.08	35.65	24.968	296.7	0.00	21.08	1526.2	.075	
ISL 50	21.07	35.72	25.027	294.0	0.00	21.06	1526.7	.149	
ISL 75	20.50	35.74	25.190	279.4	0.00	20.49	1525.8	.221	
ISL 100	20.24	35.67	25.207	278.7	0.00	20.22	1525.2	.290	
ISL 150	19.89	35.67	25.300	271.3	0.00	19.48	1525.1	.426	
ISL 200	18.64	35.58	25.581	248.3	0.00	18.60	1522.3	.558	
ISL 250	17.87	35.58	25.785	230.3	0.00	17.83	1521.0	.878	
ISL 300	16.97	35.57	25.959	213.2	0.00	16.92	1519.1	.789	
ISL 400	13.08	35.42	26.278	185.2	0.00	13.01	1515.8	.967	
ISL 500	12.67	35.20	26.608	154.5	0.00	12.60	1506.2	1.158	
ISL 600	10.00	34.80	26.783	137.1	0.00	9.93	1500.0	1.302	
ISL 800	7.32	34.54	26.909	118.6	0.00	7.24	1492.9	1.553	
ISL 1000	5.16	34.48	27.189	101.4	0.00	5.07	1489.9	1.773	
ISL 1300	4.02	34.51	27.450	78.6	0.00	3.91	1487.8	2.043	

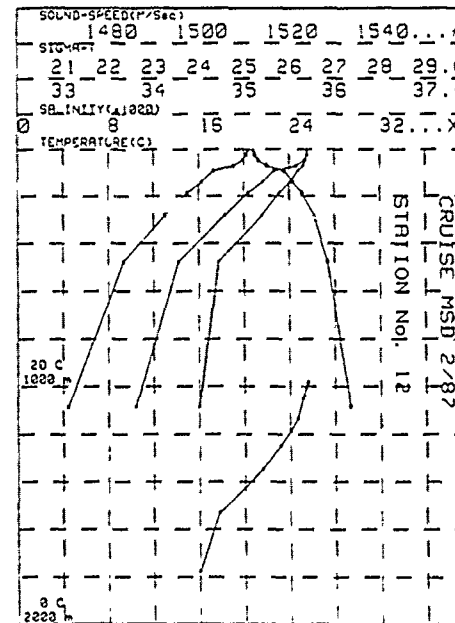
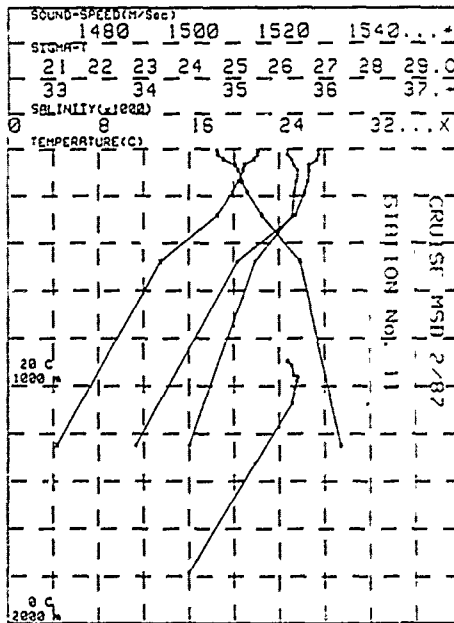
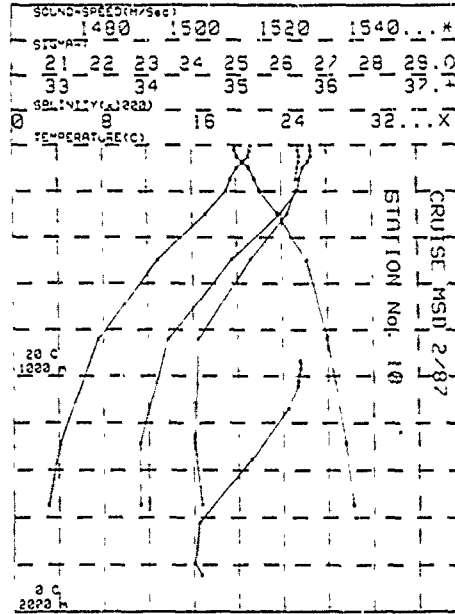
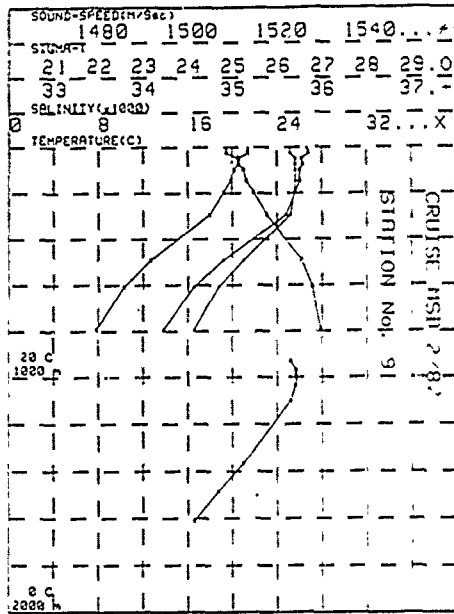
STATION 7 DATE= 14/11/87									
30.138 199.316 HSD 2/87 TIME= 0411 GHT DEPTH= 1481									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TDWP	S.S	Dym #	
m	°C	PSU	kg/m ³	°C	ML/L	°C	M/Sec		
0BS 0	21.030	35.630	24.867	297.9	0.00	21.03	1525.8		
0BS 25	20.840	35.626	25.015	294.2	0.00	20.84	1525.9		
0BS 50	20.440	35.650	25.142	283.1	0.00	20.43	1524.9		
0BS 75	19.970	35.683	25.277	271.1	0.00	19.96	1524.1		
0BS 100	19.640	35.687	25.358	264.4	0.00	19.68	1523.7		
0BS 150	18.700	35.618	25.511	245.8	0.00	18.67	1521.7		
0BS 199	17.620	35.594	25.622	223.2	0.00	17.59	1519.4		
0BS 297	15.200	35.584	26.202	186.3	0.00	15.25	1513.7		
0BS 496	10.760	34.809	26.735	141.1	0.00	10.73	1501.2		
0BS 621	8.670	34.660	26.905	125.4	0.00	8.80	1495.2		
ISL 0	21.03	35.63	24.867	297.9	0.00	21.03	1525.8	0.000	
ISL 10	20.84	35.63	24.877	297.3	0.00	20.84	1525.8	.030	
ISL 25	20.84	35.63	25.015	294.2	0.00	20.84	1525.9	.074	
ISL 50	20.44	35.65	25.142	283.1	0.00	20.43	1524.9	.148	
ISL 75	19.97	35.68	25.277	271.1	0.00	19.96	1524.1	.215	
ISL 100	19.64	35.67	25.358	264.4	0.00	19.68	1523.7	.282	
ISL 150	18.70	35.62	25.511	245.8	0.00	18.67	1521.7	.410	
ISL 200	17.60	35.59	25.826	222.8	0.00	17.56	1519.3	.527	
ISL 250	16.40	35.49	26.030	204.7	0.00	16.36	1516.4	.834	
ISL 300	15.22	35.38	26.213	186.4	0.00	15.18	1513.5	.753	
ISL 400	12.79	35.12	26.519	160.8	0.00	12.74	1506.8	.909	
ISL 500	10.71	34.89	26.743	140.4	0.00	10.65	1501.0	1.041	
ISL 600	8.99	34.70	26.885	127.3	0.00	8.92	1496.1	1.198	

STATION 8		29.302		190.356		HSD 2/87			
DATE= 14/11/87		TIME= 1143 GHT		DEPTH=		1614			
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TDWP	S.S		Dym #
m	°C	PSU	kg/m ³	°C	ML/L	°C	M/Sec		
0BS 0	21.350	35.638	24.865	305.7	0.00	21.35	1526.5		
0BS 25	21.337	35.637	24.890	306.1	0.00	21.33	1526.8		
0BS 47	20.440	35.670	25.152	283.0	0.00	20.45	1524.9		
0BS 70	20.220	35.718	25.253	273.2	0.00	20.21	1524.7		
0BS 94	19.940	35.705	25.306	269.0	0.00	19.96	1524.4		
0BS 142	18.450	35.577	25.432	258.7	0.00	18.28	1523.7		
0BS 180	18.530	35.642	25.633	241.1	0.00	18.50	1521.9		
0BS 288	16.620	35.560	26.035	205.5	0.00	16.57	1517.8		
0BS 483	12.200	35.584	26.816	153.3	0.00	12.14	1506.2		
0BS 563	9.510	34.764	26.835	132.3	0.00	9.44	1497.8		
0BS 784	7.120	34.521	27.025	114.3	0.00	7.04	1491.5		
0BS 938	5.970	34.481	27.147	103.2	0.00	5.88	1489.7		
0BS 1348	3.925	34.548	27.475	70.5	0.00	3.42	1486.9		
ISL 0	21.35	35.64	24.865	305.7	0.00	21.35	1526.5	0.000	
ISL 10	21.34	35.64	24.867	305.9	0.00	21.34	1526.8	.031	
ISL 25	21.33	35.64	24.818	303.5	0.00	21.33	1526.8	.078	
ISL 50	20.43	35.68	25.168	280.8	0.00	20.42	1524.9	.149	
ISL 75	20.17	35.72	25.264	272.4	0.00	20.18	1524.7	.218	
ISL 100	19.93	35.70	25.318	266.1	0.00	19.91	1524.4	.268	
ISL 150	19.27	35.67	25.495	255.7	0.00	19.25	1523.4	.417	
ISL 200	18.34	35.64	25.677	237.2	0.00	18.31	1521.5	.540	
ISL 250	17.35	35.62	25.868	218.5	0.00	17.34	1519.5	.655	
ISL 300	16.34	35.54	26.073	198.7	0.00	16.33	1517.5	.789	
ISL 400	14.21	35.30	26.411	154.7	0.00	14.18	1511.9	.868	
ISL 500	11.67	35.02	26.859	149.1	0.00	11.61	1504.5	1.131	
ISL 600	9.24	34.72	26.955	130.4	0.00	9.17	1497.1	1.250	
ISL 800	6.98	34.51	27.048	112.3	0.00	6.81	1491.2	1.482	
ISL 1000	5.41	34.15	27.184	94.8	0.00	5.43	1484.1	1.703	
ISL 1300	3.65	34.34	27.423	73.9	0.00	3.75	1487.2	1.984	



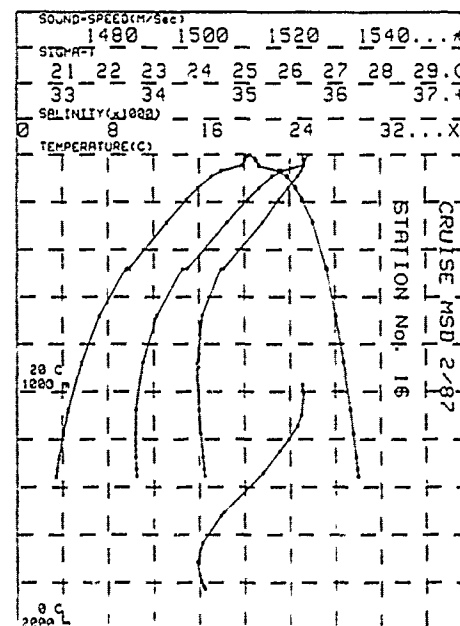
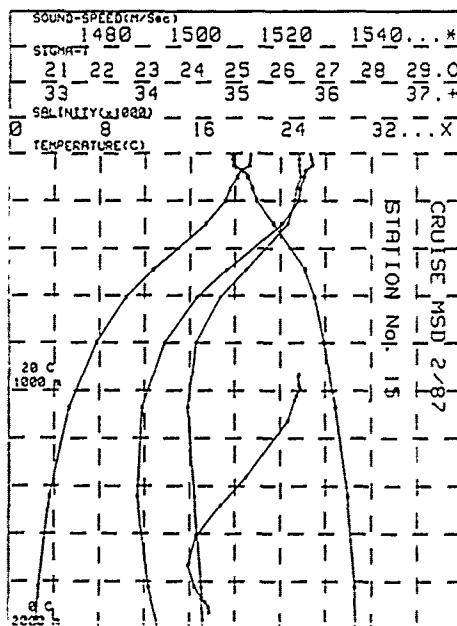
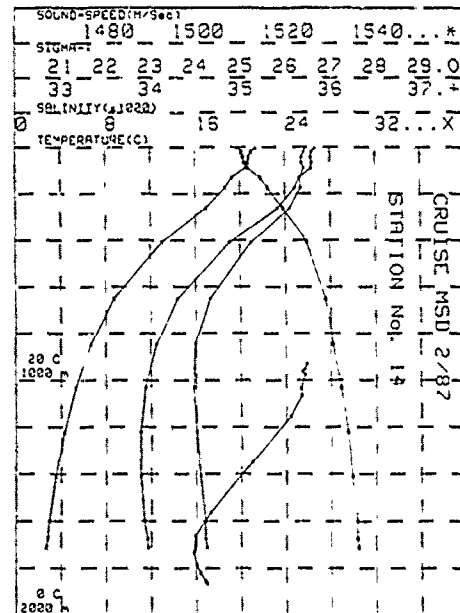
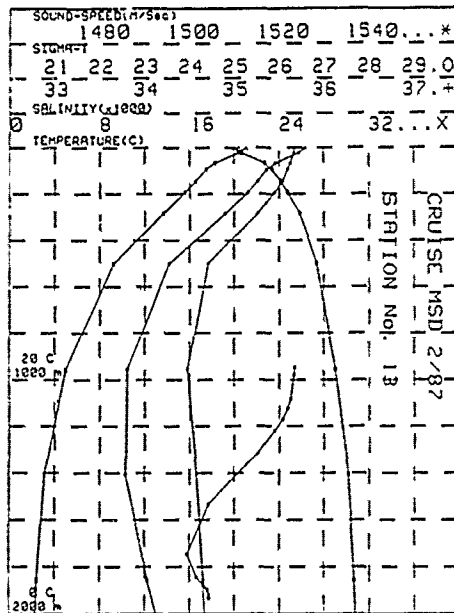
STATION 9										STATION 10									
DATE= 14/11/87					TIME= 1810 GMT					DATE= 14/11/87					TIME= 2342 GMT				
MNO 2/87					DEPTH= 2357					MNO 2/87					DEPTH= 2899				
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT,TEMP	S.S			DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT,TEMP	S.S		
m	°C	PSU	kg/m ³	CL/T	°C	M/Sec	Dyn m			m	°C	PSU	kg/m ³	CL/T	°C	M/Sec	Dyn m		
0	21.410	35.851	24.878	306.3	0.00	21.41	1328.7			0	21.270	35.688	24.848	299.9	0.00	21.27	1326.3		
24	21.400	35.851	24.881	307.0	0.00	21.40	1327.0			25	21.180	35.688	24.848	296.7	0.00	21.18	1326.3		
48	20.840	35.707	25.131	284.0	0.00	20.83	1325.3			50	21.030	35.697	25.018	294.9	0.00	21.02	1326.3		
72	20.570	35.708	25.149	282.2	0.00	20.56	1325.7			75	20.600	35.682	25.121	285.0	0.00	20.59	1325.8		
96	20.160	35.707	25.255	274.0	0.00	20.16	1325.0			100	20.030	35.678	25.271	272.8	0.00	20.01	1324.0		
144	19.820	35.713	25.320	268.8	0.00	19.80	1325.2			150	19.500	35.683	25.400	265.0	0.00	19.47	1324.0		
192	19.270	35.698	25.488	255.3	0.00	19.23	1324.2			200	19.090	35.680	25.504	253.8	0.00	19.05	1323.7		
257	17.990	35.851	25.274	230.9	0.00	17.94	1322.1			300	17.100	35.581	25.908	218.2	0.00	17.11	1319.6		
425	12.870	35.124	26.35*	156.7	0.00	12.60	1308.0			500	12.860	35.115	26.334	183.0	0.00	12.79	1308.8		
608	10.320	34.847	26.778	139.1	0.00	72.25	1501.3			841	7.590	34.558	26.981	115.3	0.00	7.48	1494.5		
752	7.810	34.571	26.965	121.4	0.00	7.73	1494.7			1287	4.120	34.508	27.382	80.4	0.00	4.02	1488.0		
ISL 0	21.41	35.85	24.878	306.3	0.00	21.41	1328.7	0.000		1549	3.064	34.588	27.549	63.4	0.00	2.93	1488.1		
ISL 10	21.41	35.85	24.880	306.8	0.00	21.40	1328.8	.031		ISL 0	21.27	35.68	24.848	299.9	0.00	21.27	1326.3	0.000	
ISL 25	21.39	35.83	24.898	305.6	0.00	21.39	1328.9	.077		ISL 10	21.24	35.68	24.852	299.7	0.00	21.24	1326.4	.030	
ISL 50	20.43	35.71	25.133	283.9	0.00	20.42	1325.3	.150		ISL 25	21.18	35.68	24.848	296.7	0.00	21.18	1326.3	.075	
ISL 75	20.53	35.71	25.160	282.3	0.00	20.52	1325.6	.221		ISL 50	21.03	35.70	25.013	294.9	0.00	21.02	1326.3	.149	
ISL 100	20.17	35.71	25.257	273.9	0.00	20.16	1325.1	.290		ISL 75	20.60	35.68	25.131	285.0	0.00	20.59	1325.8	.222	
ISL 150	19.87	35.71	25.342	267.5	0.00	19.84	1325.1	.426		ISL 100	20.03	35.68	25.271	272.8	0.00	20.01	1324.0	.291	
ISL 200	19.24	35.70	25.497	254.5	0.00	19.20	1324.1	.558		ISL 150	19.50	35.68	25.400	265.0	0.00	19.47	1324.0	.425	
ISL 250	18.87	35.67	25.637	242.8	0.00	18.83	1323.4	.680		ISL 200	19.09	35.68	25.504	253.8	0.00	19.05	1323.7	.554	
ISL 300	17.81	35.63	25.805	228.1	0.00	17.75	1321.8	.798		ISL 250	18.14	35.63	25.713	235.3	0.00	18.10	1321.6	.678	
ISL 400	14.98	35.36	26.253	187.4	0.00	14.90	1314.2	1.009		ISL 300	17.16	35.58	25.908	218.2	0.00	17.11	1319.6	.790	
ISL 500	12.31	35.10	26.571	156.2	0.00	12.44	1307.3	1.184		ISL 400	14.98	35.33	26.254	187.2	0.00	14.84	1314.2	.994	
ISL 600	10.46	34.88	26.785	140.3	0.00	10.39	1301.7	1.354		ISL 500	12.86	35.14	26.534	182.0	0.00	12.79	1308.8	1.170	
										ISL 600	11.08	34.83	26.882	148.4	0.00	10.98	1303.7	1.358	
										ISL 800	8.07	34.90	26.844	123.9	0.00	7.98	1493.6	1.600	
										ISL 1000	6.09	34.31	27.148	104.0	0.00	6.00	1491.2	1.828	
										ISL 1300	4.05	34.51	27.382	79.4	0.00	3.95	1488.0	2.105	
										ISL 1500	3.21	34.57	27.531	66.2	0.00	3.10	1488.1	2.252	

STATION 11										STATION 12									
DATE= 26/11/87					TIME= 1231 GMT					DATE= 26/11/87					TIME= 1813 GMT				
MNO 2/87					DEPTH= 4760					MNO 2/87					DEPTH= 4780				
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT,TEMP	S.S			DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT,TEMP	S.S		
m	°C	PSU	kg/m ³	CL/T	°C	M/Sec	Dyn m			m	°C	PSU	kg/m ³	CL/T	°C	M/Sec	Dyn m		
0	22.170	35.800	24.627	330.2	0.00	22.17	1328.6			0	20.360	35.701	25.202	273.5	0.00	20.36	1323.9		
22	22.080	35.592	24.647	329.2	0.00	22.08	1328.7			23	20.210	35.683	25.238	273.1	0.00	20.21	1323.9		
45	21.780	35.638	24.771	316.2	0.00	21.75	1328.3			46	19.880	35.677	25.311	266.8	0.00	19.87	1323.4		
68	20.510	35.640	25.022	293.1	0.00	20.50	1328.5			69	19.080	35.649	25.503	249.3	0.00	19.05	1321.4		
91	20.780	35.702	25.093	297.0	0.00	20.74	1328.5			92	17.290	35.588	25.898	212.6	0.00	17.27	1318.8		
138	20.410	35.682	25.182	282.4	0.00	20.38	1328.3			140	16.290	35.506	26.078	15.7	0.00	16.26	1314.2		
186	19.880	35.660	25.305	272.3	0.00	19.85	1325.6			188	15.870	35.391	26.221	178.6	0.00	14.94	1510.9		
283	18.570	35.645	25.625	245.0	0.00	18.52	1323.6			283	13.010	35.197	26.544	155.3	0.00	12.97	1505.8		
478	13.550	35.738	26.464	166.8	0.00	13.48	1313.8			478	9.380	34.722	26.842	129.3	0.00	9.31	1495.5		
1248	4.540	34.504	27.358	83.1	0.00	4.24	1448.3			1044	4.470	34.500	27.359	83.5	0.00	4.38	1486.1		
ISL 0	22.17	35.80	24.627	330.2	0.00	22.17	1328.6	0.008		ISL 0	20.36	35.70	25.202	273.5	0.00	20.36	1323.9	0.008	
ISL 10	22.16	35.80	24.638	329.8	0.00	22.15	1328.7	.033		ISL 10	20.32	35.70	25.212	273.0	0.00	20.32	1323.9	.026	
ISL 25	22.07	35.60	24.656	328.5	0.00	22.05	1328.6	.088		ISL 25	20.25	35.68	25.238	273.0	0.00	20.19	1323.8	.061	
ISL 50	21.52	35.64	24.841	311.7	0.00	21.51	1327.7	.163		ISL 50	19.62	35.64	25.328	246.5	0.00	19.61	1323.3	.141	
ISL 75	20.67	35.68	25.047	293.1	0.00	20.65	1328.5	.236		ISL 75	19.15	35.63	25.409	229.4	0.00	18.95	1320.9	.257	
ISL 100	20.71	35.70	25.108	288.0	0.00	20.69	1328.5	.311		ISL 100	17.14	35.58	25.824	200.1	0.00	17.12	1318.3	.293	
ISL 150	20.58	35.69	25.210	280.1	0.00	20.56	1328.2	.453		ISL 150	15.87	35.48	26.124	192.5	0.00	15.85	1315.4	.596	
ISL 200	19.74	35.61	25.347	266.8	0.00	19.70	1323.5	.590		ISL 200	14.72	35.37	26.218	173.3	0.00	14.69	1312.4	.641	
ISL 250	19.10	35.63	25.509	255.1	0.00	19.08	1324.9	.721		ISL 250	13.68	35.28	26.481	162.8	0.00	13.64	1307.5	.758	
ISL 300	18.09	35.61	25.708	237.4	0.00	18.04	1322.3	.844		ISL 300	12.63	35.15	26.773	145.0	0.00	12.61	1304.8	.881	
ISL 400	15.43	35.33	26.158	190.8	0.00	15.37	1313.6	1.083		ISL 400	10.70	34.89	26.931	126.1	0.00	10.63	1499.2	.134	



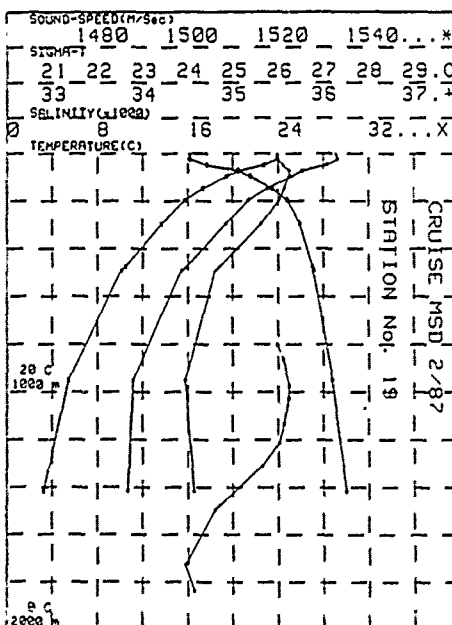
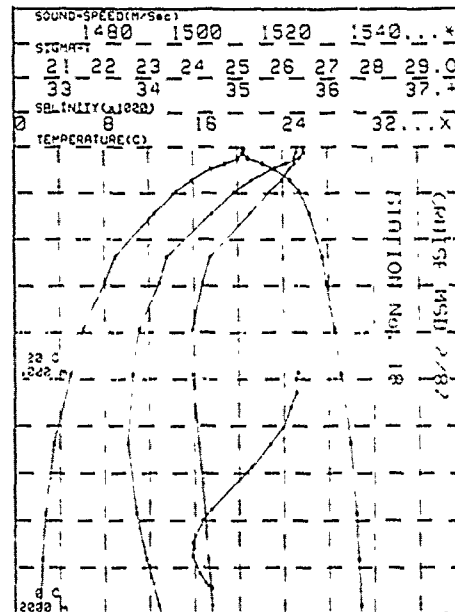
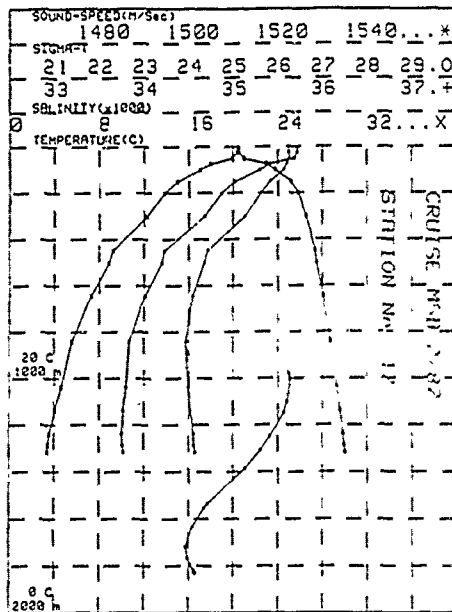
STATION 13				29.305 137.32E				MSD 2/87				
DATE= 29/11/87				TIME= 0435 GHT				DEPTH= 3500				
DEPTH	m	TEMP	°C	SALINITY	SIGMA-T	CL/T	A.S.V	CL/T	OX	POT.TEMP	S.S	Dyn. #
088	0	21.070	35.872	24.948	295.9	0.00	21.07	1525.8	0.00	21.07	1525.8	0.00
088	23	20.250	35.644	25.156	279.8	0.00	20.25	1524.3	0.00	20.25	1524.3	0.00
088	70	18.270	35.629	25.665	232.0	0.00	18.27	1519.2	0.00	18.27	1519.2	0.00
088	97	17.490	35.595	25.854	218.7	0.00	17.47	1517.3	0.00	17.47	1517.3	0.00
088	147	16.540	35.542	26.040	200.5	0.00	16.52	1515.2	0.00	16.52	1515.2	0.00
088	194	15.540	35.449	26.190	187.6	0.00	15.55	1513.0	0.00	15.55	1513.0	0.00
088	244	13.670	35.258	26.455	164.4	0.00	13.63	1506.1	0.00	13.63	1506.1	0.00
088	501	9.280	34.713	26.848	129.1	0.00	9.32	1489.6	0.00	9.32	1489.6	0.00
088	954	5.030	34.477	27.257	91.1	0.00	4.99	1468.2	0.00	4.99	1468.2	0.00
088	1408	3.100	34.580	27.541	63.4	0.00	3.00	1445.9	0.00	3.00	1445.9	0.00
088	1834	2.420	34.637	27.643	52.1	0.00	2.29	1440.6	0.00	2.29	1440.6	0.00
088	2307	2.028	34.706	27.734	45.7	0.00	1.88	1446.7	0.00	1.88	1446.7	0.00
088	2750	1.593	34.723	27.781	40.4	0.00	1.40	1502.4	0.00	1.40	1502.4	0.00
088	3016	1.306	34.723	27.796	38.3	0.00	1.17	1504.2	0.00	1.17	1504.2	0.00
088	3194	1.332	34.724	27.801	37.9	0.00	1.10	1509.0	0.00	1.10	1509.0	0.00
134	0	21.07	35.87	24.948	295.9	0.00	21.07	1525.8	0.00	21.07	1525.8	0.00
134	10	20.80	35.67	25.059	288.3	0.00	20.80	1523.2	0.00	20.80	1523.2	0.00
134	23	20.18	35.64	25.184	277.2	0.00	20.18	1521.1	0.00	20.18	1521.1	0.00
134	50	19.05	35.64	25.499	246.1	0.00	19.04	1511.1	0.00	19.04	1511.1	0.00
134	75	18.11	35.62	25.720	228.8	0.00	18.10	1518.8	0.00	18.10	1518.8	0.00
134	100	17.43	35.59	25.844	215.7	0.00	17.42	1517.2	0.00	17.42	1517.2	0.00
134	130	16.48	35.54	26.049	198.7	0.00	16.48	1515.1	0.00	16.48	1515.1	0.00
134	200	15.49	35.44	26.263	186.3	0.00	15.48	1512.8	0.00	15.48	1512.8	0.00
134	250	14.43	35.34	26.358	173.1	0.00	14.29	1510.1	0.00	14.29	1510.1	0.00
134	300	13.34	35.21	26.444	161.7	0.00	13.20	1507.1	0.00	13.20	1507.1	0.00
134	400	11.15	34.93	26.880	144.3	0.00	11.10	1500.8	0.00	11.10	1500.8	0.00
134	500	9.20	34.71	26.847	129.2	0.00	9.14	1495.6	0.00	9.14	1495.6	0.00
134	600	8.18	34.63	26.948	120.0	0.00	8.10	1492.8	0.00	8.10	1492.8	0.00
134	800	6.23	34.52	27.131	103.0	0.00	6.15	1488.4	0.00	6.15	1488.4	0.00
134	1000	4.78	34.49	27.292	87.7	0.00	4.71	1484.2	0.00	4.71	1484.2	0.00
134	1200	3.45	34.58	27.448	68.5	0.00	3.35	1485.9	0.00	3.35	1485.9	0.00
134	1500	2.84	34.60	27.570	60.7	0.00	2.83	1486.7	0.00	2.83	1486.7	0.00
134	2000	2.30	34.66	27.684	50.0	0.00	2.18	1492.6	0.00	2.18	1492.6	0.00
134	2500	1.83	34.72	27.753	43.1	0.00	1.65	1499.1	0.00	1.65	1499.1	0.00
134	3000	1.40	34.72	27.793	38.4	0.00	1.18	1505.9	0.00	1.18	1505.9	0.00

STATION 14				29.318 158.17E				MSD 2/87					
DATE= 29/11/87				TIME= 1130 GHT				DEPTH= 1800					
DEPTH	m	TEMP	°C	SALINITY	PSU	SIGMA-T	CL/T	A.S.V	CL/T	OX	POT.TEMP	S.S	Dyn. #
088	0	21.410	35.722	24.940	300.5	0.00	21.41	1528.8	0.00	21.41	1528.8	0.00	
088	21	20.970	35.710	25.044	291.3	0.00	20.97	1525.9	0.00	20.97	1525.9	0.00	
088	44	20.780	35.688	25.077	289.0	0.00	20.77	1523.8	0.00	20.77	1523.8	0.00	
088	68	20.700	35.664	25.086	286.0	0.00	20.68	1521.9	0.00	20.68	1521.9	0.00	
088	91	20.490	35.711	25.175	281.4	0.00	20.47	1525.0	0.00	20.47	1525.0	0.00	
088	132	19.300	35.665	25.454	218.2	0.00	19.28	1523.1	0.00	19.28	1523.1	0.00	
088	155	18.480	35.673	25.808	195.0	0.00	18.46	1520.2	0.00	18.46	1520.2	0.00	
088	253	16.830	35.548	25.953	212.8	0.00	16.89	1519.1	0.00	16.89	1519.1	0.00	
088	300	13.070	35.123	26.485	184.0	0.00	13.06	1520.8	0.00	13.06	1520.8	0.00	
088	463	8.720	34.658	26.885	127.4	0.00	8.64	1509.7	0.00	8.64	1509.7	0.00	
088	608	4.750	34.493	27.050	111.0	0.00	4.68	1507.8	0.00	4.68	1507.8	0.00	
088	1034	5.330	34.475	27.220	96.1	0.00	5.28	1446.7	0.00	5.28	1446.7	0.00	
088	1222	4.290	34.504	27.361	82.2	0.00	4.24	1468.7	0.00	4.24	1468.7	0.00	
088	1310	3.543	34.548	27.467	66.7	0.00	3.51	1481.8	0.00	3.51	1481.8	0.00	
088	1600	2.940	34.598	27.570	61.3	0.00	2.92	1486.4	0.00	2.92	1486.4	0.00	
088	1876	2.640	34.508	27.545	60.0	0.00	2.72	1490.3	0.00	2.72	1490.3	0.00	
088	1714	2.700	34.621	27.610	57.4	0.00	2.58	1449.4	0.00	2.58	1449.4	0.00	
134	0	21.41	35.73	24.940	300.5	0.00	21.41	1528.8	0.00	21.41	1528.8	0.00	
134	10	21.17	35.72	24.988	295.3	0.00	21.17	1527.6	0.00	21.17	1527.6	0.00	
134	25	20.83	35.70	25.051	290.8	0.00	20.82	1525.9	0.00	20.82	1525.9	0.00	
134	50	20.67	35.68	25.063	286.7	0.00	20.67	1523.8	0.00	20.67	1523.8	0.00	
134	75	20.67	35.70	25.115	264.9	0.00	20.66	1525.9	0.00	20.66	1525.9	0.00	
134	100	20.18	35.70	25.216	217.0	0.00	20.18	1525.1	0.00	20.18	1525.1	0.00	
134	150	18.06	35.87	25.522	250.3	0.00	18.03	1532.8	0.00	18.03	1532.8	0.00	
134	200	16.53	35.81	25.614	217.0	0.00	16.50	1530.0	0.00	16.50	1530.0	0.00	
134	250	17.22	35.77	25.904	210.0	0.00	17.13	1515.0	0.00	17.13	1515.0	0.00	
134	300	15.84	35.43	26.106	186.5	0.00	15.75	1515.4	0.00	15.75	1515.4	0.00	
134	350	13.21	35.14	26.441	166.6	0.00	13.10	1510.6	0.00	13.10	1510.6	0.00	
134	400	11.12	34.81	26.648	146.6	0.00	11.01	1506.8	0.00	11.01	1506.8	0.00	
134	600	8.48	34.73	26.823	133.3	0.00	8.41	1494.0	0.00	8.41	1494.0	0.00	
134	800	7.14	34.52	27.017	111.4	0.00	7.06	1492.2	0.00	7.06	1492.2	0.00	
134	1000	5.56	34.26	27.183	86.0	0.00	5.47	1490.9	0.00	5.47	1490.9	0.00	
134	1200	3.87	34.08	27.358	67.7	0.00	3.81	1497.7	0.00	3.81	1497.7	0.00	
134	1500	3.20	34.52	27.239	66.4	0.00	3.09	1467.8	0.00	3.09	1467.8	0.00	



STATION 17 DATE= 30/11/87										31.155 160.000 HSD 2/87 TIME= 1225 GMT									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	SE	POT-TEMP	S.S	DYN		DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	SE	POT-TEMP	S.S	DYN	
m	°C	PSU	CL/T	ML/L	°C	N/Sec				m	°C	PSU	CL/T	ML/L	°C	N/Sec			
0	20.480	35.618	25.105	284.8	0.00	20.48	1524.2	0.000		0	20.480	35.618	25.105	284.8	0.00	20.48	1524.2	0.000	
025	20.400	35.624	25.113	285.1	0.00	20.40	1524.4			025	20.400	35.624	25.113	285.1	0.00	20.40	1524.4		
051	19.980	35.634	25.252	272.6	0.00	19.97	1523.7			051	19.980	35.634	25.252	272.6	0.00	19.97	1523.7		
74	17.950	35.601	25.744	226.4	0.00	17.94	1518.3			74	17.950	35.601	25.744	226.4	0.00	17.94	1518.3		
102	17.010	35.564	25.947	208.0	0.00	16.99	1513.9			102	17.010	35.564	25.947	208.0	0.00	16.99	1513.9		
152	15.000	35.419	26.293	176.4	0.00	14.98	1510.4			152	15.000	35.419	26.293	176.4	0.00	14.98	1510.4		
202	13.850	35.308	26.457	161.9	0.00	13.82	1507.4			202	13.850	35.308	26.457	161.9	0.00	13.82	1507.4		
302	12.790	35.134	26.636	146.8	0.00	12.75	1503.6			302	12.790	35.134	26.636	146.8	0.00	12.75	1503.6		
450	9.280	34.716	26.851	127.9	0.00	9.23	1494.8			450	9.280	34.716	26.851	127.9	0.00	9.23	1494.8		
503	8.900	34.676	26.861	125.7	0.00	8.84	1494.2			503	8.900	34.676	26.861	125.7	0.00	8.84	1494.2		
645	7.280	34.541	27.018	113.3	0.00	7.22	1490.2			645	7.280	34.541	27.018	113.3	0.00	7.22	1490.2		
842	5.630	34.473	27.183	96.0	0.00	5.56	1486.6			842	5.630	34.473	27.183	96.0	0.00	5.56	1486.6		
1038	4.620	34.491	27.315	85.6	0.00	4.54	1485.9			1038	4.620	34.491	27.315	85.6	0.00	4.54	1485.9		
1136	4.084	34.518	27.394	77.8	0.00	3.99	1485.4			1136	4.084	34.518	27.394	77.8	0.00	3.99	1485.4		
1236	3.622	34.556	27.471	70.2	0.00	3.53	1485.2			1236	3.622	34.556	27.471	70.2	0.00	3.53	1485.2		
1287	3.451	34.580	27.491	66.2	0.00	3.35	1485.3			1287	3.451	34.580	27.491	66.2	0.00	3.35	1485.3		
1317	3.380	34.574	27.509	64.5	0.00	3.26	1485.3			1317	3.380	34.574	27.509	64.5	0.00	3.26	1485.3		
151	20.48	35.62	25.105	284.8	0.00	20.48	1524.2	0.000		151	20.48	35.62	25.105	284.8	0.00	20.48	1524.2	0.000	
10	20.45	35.62	25.106	284.1	0.00	20.45	1524.3	.028		10	20.45	35.62	25.106	284.1	0.00	20.45	1524.3	.028	
25	20.40	35.62	25.113	285.1	0.00	20.40	1524.4	.071		25	20.40	35.62	25.113	285.1	0.00	20.40	1524.4	.071	
50	20.03	35.633	25.242	275.7	0.00	20.02	1523.8	.140		50	20.03	35.633	25.242	275.7	0.00	20.02	1523.8	.140	
75	18.01	35.60	25.732	227.7	0.00	18.00	1518.5	.203		75	18.01	35.60	25.732	227.7	0.00	18.00	1518.5	.203	
100	17.04	35.57	25.932	209.3	0.00	17.07	1516.1	.256		100	17.04	35.57	25.932	209.3	0.00	17.07	1516.1	.256	
150	15.04	35.42	26.282	177.3	0.00	15.04	1510.8	.315		150	15.04	35.42	26.282	177.3	0.00	15.04	1510.8	.315	
200	13.88	35.31	26.452	162.4	0.00	13.86	1507.5	.429		200	13.88	35.31	26.452	162.4	0.00	13.86	1507.5	.429	
250	13.15	35.24	26.548	154.4	0.00	13.11	1505.8	.519		250	13.15	35.24	26.548	154.4	0.00	13.11	1505.8	.519	
300	12.32	35.14	26.635	147.1	0.00	12.28	1503.7	.594		300	12.32	35.14	26.635	147.1	0.00	12.28	1503.7	.594	
400	9.94	34.81	26.800	132.2	0.00	9.93	1496.8	.733		400	9.94	34.81	26.800	132.2	0.00	9.93	1496.8	.733	
500	8.92	34.68	26.878	123.9	0.00	8.87	1494.2	.844		500	8.92	34.68	26.878	123.9	0.00	8.87	1494.2	.844	
600	7.75	34.58	26.978	117.1	0.00	7.69	1491.3	.945		600	7.75	34.58	26.978	117.1	0.00	7.69	1491.3	.945	
800	5.93	34.48	27.150	101.0	0.00	5.88	1487.3	1.204		800	5.93	34.48	27.150	101.0	0.00	5.88	1487.3	1.204	
1000	4.83	34.48	27.286	86.4	0.00	4.74	1486.1	1.282		1000	4.83	34.48	27.286	86.4	0.00	4.74	1486.1	1.282	
1300	3.42	34.58	27.499	87.5	0.00	3.32	1485.4	1.624		1300	3.42	34.58	27.499	87.5	0.00	3.32	1485.4	1.624	

STATION 18				31.243 159.206 HSD 2/87					
DATE= 30/11/87				TIME= 1742 GMT					
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	SE	POT-TEMP	S.S	DYN	
m	°C	PSU	CL/T	ML/L	°C	N/Sec			
006	0	20.590	35.657	25.107	284.6	0.00	20.59	1524.3	0.000
008	24	20.550	35.658	25.118	284.4	0.00	20.55	1524.8	.028
010	48	20.060	35.631	25.229	274.7	0.00	20.05	1523.8	.042
012	72	18.440	35.636	25.549	249.0	0.00	18.43	1520.6	.071
014	96	17.550	35.576	25.625	219.3	0.00	17.53	1517.4	.101
016	145	15.820	35.469	26.185	186.5	0.00	15.80	1512.9	.152
018	193	14.430	35.346	26.364	170.7	0.00	14.40	1509.2	.202
020	246	12.510	35.134	26.595	150.6	0.00	12.47	1504.1	.252
022	478	8.980	34.686	26.879	125.4	0.00	8.91	1494.0	.302
024	586	8.030	34.583	26.950	119.8	0.00	7.97	1492.2	.353
026	784	6.120	34.480	27.127	103.4	0.00	6.05	1487.8	.403
028	962	4.950	34.477	27.246	90.3	0.00	4.87	1486.3	.453
030	1276	3.490	34.550	27.480	94.3	0.00	3.38	1485.3	.503
032	1570	2.752	34.617	27.602	97.5	0.00	2.64	1487.2	.553
034	1764	2.474	34.652	27.654	92.6	0.00	2.35	1489.3	.603
036	1960	2.321	34.685	27.701	48.8	0.00	2.18	1492.0	.653
038	2006	2.271	34.685	27.667	48.0	0.00	2.13	1492.6	.703
151	0	20.59	35.66	25.107	284.6	0.00	20.59	1524.3	0.000
152	10	20.57	35.66	25.112	284.3	0.00	20.57	1524.8	.028
153	25	20.24	35.66	25.119	284.4	0.00	20.24	1524.7	.071
154	50	19.94	35.63	25.257	272.1	0.00	19.95	1523.6	.101
155	75	18.66	35.63	25.586	241.4	0.00	18.65	1520.4	.151
156	100	17.40	35.57	25.854	218.3	0.00	17.38	1517.1	.202
157	150	13.65	35.47	26.186	186.4	0.00	13.64	1512.5	.252
158	200	10.29	35.34	26.519	160.1	0.00	10.28	1507.9	.302
159	250	13.27	35.22	26.509	156.1	0.00	13.23	1506.1	.353
160	300	12.21	35.09	26.816	146.4	0.00	12.17	1503.2	.403
161	400	10.09	34.82	26.789	133.3	0.00	10.05	1497.0	.453
162	500	8.77	34.68	26.992	120.4	0.00	8.73	1492.0	.503
163	600	7.98	34.58	26.942	116.7	0.00	7.83	1491.6	.553
164	800	6.83	34.48	27.137	102.3	0.00	5.96	1487.7	.603
165	1000	4.64	34.48	27.282	86.8	0.00	4.76	1486.2	.653
166	1500	3.48	34.58	27.482	66.2	0.00	3.22	1485.1	.703
167	2000	2.27	34.68	27.667	58.8	0.00	2.17	1486.8	.753
168	2100	2.22	34.58	27.696	46.8	0.00	2.14	1483.2	1.040



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Winch operations and station keeping were controlled by naval staff. Data processing programmes used are versions corrected and updated by the author from programs written by R.L. May (1969). All oxygen determinations were made by Mr Barry Scott.

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17 SUMMARY OR ABSTRACT

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(U) Nansen station data taken by Maritime Systems Division (Sydney), (formerly known as RANRL) or Royal Australian Navy Research Laboratory, are presented as tables and plots. The Nansen stations were occupied in the East Indian and southwest Pacific Oceans between November 1982 and December 1987 by Royal Australian Navy oceanographic research vessels HMAS Kimbla and HMAS Cook. The data tables are also available on floppy disk.

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On page 111, delete the following lines:

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$$d = 0.109749*0.01$$

Paste the attached amendment over the deleted lines.

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